

iPad & iPhone **user**

iPhone 6c

New 4in iPhone
on the way



**EXPERT
TIPS & TRICKS**

for iPad
& iPhone
users



REVIEWED

iPad Pro Smart Keyboard



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Cover image courtesy of Lukas Baxa at 3DFuture (3dfuture.net)

Welcome...

Welcome to the latest issue of *iPad & iPhone User*, the only guide you need to the wonderful world of iOS.

As is customary at this point in the year, in this issue we look at what we think Apple has planned for 2016. With an event rumoured for March, we might just be seeing a new Apple Watch and the long-awaited 4in iPhone 6c. We look at what we can expect from the event on page 4 and round up all the latest 6c news on page 19. We've also concept designs courtesy of Lukas Baxa at 3DFuture (cover and page 19) and Martin Hajek (page 30).

We also have an overview of the biggest wins, fails and surprises of 2015 (page 7) including the arrival of the iPhone 6s, the Apple Watch and Apple Music. It was actually quite a busy year for Apple, can the company maintain the momentum in 2016?

Plus, we have amassed 60 iPhone and iPad tips because let's face it, no matter how well you think you know how to use your device there are always handy tricks that can make your life easier. Find out more on pages 31 and 48.

We've also tested the iPad Pro Smart Keyboard and reflect on the Apple Watch, eight months after its launch. You can read our thoughts on pages 104 and 100, respectively.

We hope you've enjoy the issue. Feel free to send us your feedback via facebook.com/ipadiphoneuser or email rob_grant@idg.co.uk.



Apple Watch 2, iPhone 6c and iPad Air 3 launch event

Rumours suggest Apple to unveil new products in March

Apple will hold its next event in March 2016, at which it will unveil the Apple Watch 2, alongside the rumoured iPhone 6c and the iPad Air 3, according to reports.

Rumours suggest that the Apple Watch 2 will appear at that event but that it won't ship until April, a year after the first Apple Watch went on sale.

Apple has held events in March over the years, including the launch of the Apple Watch and MacBook in 2015 and the launch of the iPad 3 back in 2012. It seems likely that the Apple Watch 2 won't be the only new product to launch at the March event. A number of Apple products are due

an update around that time. We think we may see the following new Apple products at the rumoured March 2016 Apple event.

Apple Watch 2

In April it will be a year since the Apple Watch launched, so perfect time for a new model to appear. The new Watch is said to offer sleep tracking and better health sensor technologies. It may also offer better battery life, a FaceTime camera, and crucially that it will be less reliant on the iPhone.

iPhone 6c

According to a Macworld survey, 20 percent of people polled want a smaller 4in iPhone and it looks like they may get their wish. Rumour has it that an 6c is coming and that it could arrive in the spring.

With this in mind, it seems likely that an Apple Watch event would also include a launch of the new 4in iPhone, which is said to come in a colourful metallic case (rather than the iPhone 5c plastic case).

It's also expected that the new phone will offer an improved camera compared to the iPhone 5s. The A8 processor is likely to be Apple's choice for powering this new iPhone, rather than the A9 in the iPhone 6s and 6s Plus. While it's not thought that it will include 3D touch found in the iPhone 6s and 6s Plus, it is expected that the 6c will include Touch ID for use with Apple Pay.

iPad Air 3

The iPad Air wasn't updated in September 2015, so we expect to see an update soon, and the rumoured March event would be perfect for this launch.

Rumours suggest that the iPad Air 3 will be even thinner than the iPad Air 2, that the aluminium it is crafted from will be even stronger than the current model, that a rose gold version might make an appearance, and that the megapixel count on the camera might improve.

We also expect that A9X chip (as found in the iPad Pro) might appear in the new iPad Air 3.

MacBook Air

Another product rumoured to be in the pipeline is an update to the MacBook Air with the 11in model disappearing from the line up and a new 15in model being added.

There have been some rumours it may gain a Retina screen, but it seems unlikely as that would put it in competition with the MacBook Pro and the MacBook, and we imagine Apple wants to keep the price down. It is likely the new MacBook Air will gain Force Touch features, however. **Karen Haslam**





Apple's hits, misses and surprises of 2015

We round up the company's biggest moments of 2015

As Apple makes more and more money by selling more and more iPhones, it seems like the company barely has to try to remain at the top of the heap. And yet 2015 was one of Cupertino's biggest years ever in terms of innovation, with product refreshes almost across the board (sorry, Mac Pro), a new device category (hey, Apple Watch), and a streaming service to rival Spotify (Apple Music).

But the shiny patina of new devices didn't distract anyone when Apple missed the mark this year, as it sometimes does. From the weird staggered rollouts of the Apple Watch in spring and Apple Pencil in fall to Apple Music's iCloud disaster, Apple wasn't without its missteps in 2015.

Then there were the head-scratching rumours, the indecipherable product decisions, and more moments that made us go, “Wait, what?”

Let’s recap Apple’s big year.

Record-breaking iPhone sales

Apple made \$32.2 billion by selling 48 million iPhones in the last quarter of 2015, capping off what CEO Tim Cook called Apple’s “most successful year ever.” The company’s revenue grew to almost \$234 billion in the fiscal year, which included just two days of iPhone 6s and 6s Plus sales. Apple sold 13 million iPhones during that launch weekend, and is expecting to make between \$75.5bn and \$77.5bn when it reports holiday quarter earnings at the end of January.

The iPhone has been on the market for eight years, so how does Apple continue to sell so many? It’s thanks in part to China – the Chinese continue to buy iPhones in droves, and this time around, the country was one of the latest model’s launch day markets.

(Almost) everything is new

Apple didn’t just put out new iPhones, as it does every fall. Practically every product in the company’s lineup was refreshed in 2015. We got new MacBooks, including a 12in gold model, iMacs, the long-awaited 12.9in Pro and a high-powered iPad mini, a completely overhauled fourth-generation Apple TV, an entirely new product category with the Apple Watch.

These hardware updates weren’t minor ones, like the lackluster iPad mini 3 released last fall. The



new iPhone's flagship features include 3D Touch and a revamped camera; the iPad mini 4 is now as powerful as an iPad Air 2, the new MacBook is the most portable laptop around; and the Apple TV has a full-fledged App Store and Siri integration.

This year was huge for Apple hardware.

Apple TV's long-awaited reboot

The new Apple TV deserves a separate shout-out for being a really, really good set-top box. Apple waited three years to overhaul the TV, and in that time it was left in the dust by rivals Roku, Amazon Fire TV, and even Google's Chromecast streaming stick.

That ended in November with the new Apple TV, which has its own App Store and a healthy roster of must-have apps, plus a brand new touchpad remote



with Siri integration. It can even support games, with the touchpad remote substituting for a game controller (unless you want to shell out more for an MFi game controller like this one).

The Apple TV isn't perfect – although it's gotten better after a key software update – and more tvOS apps are desperately needed. Plus, we still have hope that Apple will cut through the red tape and pull off a live TV streaming service that will let us finally cut the cord. But the fourth-generation TV is better than ever, and its £129 starting price tag isn't too bad, either.

Apple wins over Taylor Swift

Apple Music ran into trouble before it even launched (and then some more trouble afterward, which we'll get into later), but the company managed to get the world's biggest pop star on its side.

Apple was planning to withhold royalties during the free three-month trials offered to Apple

Music subscribers, and when Taylor Swift caught wind of this, she took to Tumblr to post a gently admonishing open letter to the company. They listened, promising to pay royalties during the free trials after all, and Swift endorsed the service by offering up her 1989 album to stream for the first time, then giving Apple the exclusive rights to her 1989 World Tour Live documentary, which aired on 20 December. (Apple paid Swift for that pleasure.) It was a win for all involved.

Apple Music and the scrambled libraries

Apple rolled out Apple Music on desktops with iTunes 12.2, bundling its streaming library with your iTunes purchases with the help of iCloud Music Library. But when iTunes users enabled iCloud Music Library to merge streaming tracks with purchased ones, they watched iTunes mangle their existing libraries.

In some cases, there were minor problems like album artwork gone wrong. In other, more serious circumstances, iTunes wiped or corrupted thousands of tracks from some libraries, resulting in hundreds of angry Apple support forum complaints and one very high-profile rant.

Apple Music managed to rack up 15 million listeners in spite of the ruckus, though who knows how many more subscribers would've stuck around if their libraries had remained intact?

Where's the Apple Pencil?

The 12.9in iPad Pro launched in November with two complementary accessories, the new Smart Keyboard and Apple Pencil, the company's first



iPad stylus. Without the stylus, the new tablet is just a really, really big iPad. With it, creatives have a tool that makes the most of all that screen real estate. So when the iPad Pro went on sale and its accessories, specifically the long-awaited Pencil, were in short supply, Pro buyers were more than a little unhappy. While the Smart Keyboard was also on back order, Apple was also selling an excellent third-party option, Logitech's Create. Apple Pencil has no equivalent, so its absence was a frustrating one for Pro users who had to wait weeks to use the giant tablet to its full potential.

The strange Apple Watch launch

For its most personal device ever, Apple restricted purchases to online only. Buyers couldn't line up at Apple stores to snag an Apple Watch at the height of

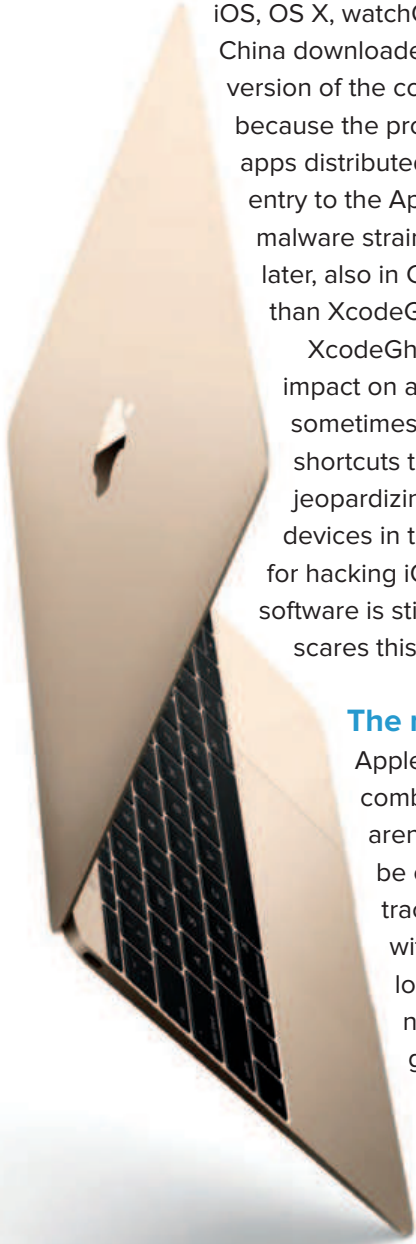


the hype, and some watch models were on back-order for weeks after launch.

Not being able to buy Apple's latest device anywhere but online at Apple.com was a bit of a shock for buyers used to finding the latest gadgets in retail stores, too. In fact, as Macworld columnist Jason Snell said, the real Apple Watch party didn't start until six months after its release, when Apple finally was able to fulfil demand in launch countries and widened the watch's availability to include third-party retailers.

Malware hits iOS App Store

2015 will be remembered as the year malware finally penetrated the iOS App Store, proving that Apple's walled garden isn't impervious to infection. Before this year, you mainly had to worry about malware on jailbroken devices, because Apple's App Store approval process is notoriously tough. But this year, the iOS App Store was hit twice with malware scares, both times in China. Apps infected with malware managed to bypass the company's security safeguards by using a modified, sketchy version of Xcode, the code used to write apps for



iOS, OS X, watchOS, and tvOS. Developers in China downloaded XcodeGhost, an infected version of the code, from Chinese servers because the process was faster. Then those apps distributed the malware after gaining entry to the App Store. YiSpecter, another malware strain, popped up just weeks later, also in China, but was less severe than XcodeGhost.

XcodeGhost didn't have a huge impact on apps, but it proved that sometimes developers will take shortcuts that Apple didn't foresee, jeopardizing the safety of your devices in the process. The going rate for hacking iOS is \$1 million, so Apple's software is still incredibly secure, but the scares this year prove it's not perfect.

The new MacBook

Apple's lithe 12in MacBook combines technologies that aren't yet standard, but could be one day. The Force Touch trackpad, super thin keyboard with reduced key travel, and lone USB-C port make the new MacBook a truly next-generation laptop, which is awesome in theory. In reality, the keyboard isn't the easiest to type on, and the USB-C connector makes the new MacBook incompatible with

basically every other device you own. It's frustrating for now, because the USB-C ecosystem is still so small. That will change in the future, but people who drop £1,049 on the 12in MacBook will face struggles that buyers of other MacBook models don't, at least for awhile longer.

The Apple Car rumours

This one is a head-scratcher for sure. Earlier in 2015, rumours began to swirl that Apple was recruiting a slew of car experts to join the company. At the same time, Apple CEO Tim Cook and design chief Jony Ive began hinting in press interviews that the automobile space was an interesting one. Of course, Apple hasn't come out and said, "Hey, world, we're building an electric car." But all signs point to a secret auto project in the works at 1 Infinite Loop.

Let's review the evidence: Apple has hired not just car experts, but specialists in deep learning and artificial intelligence. It's unclear if Apple is exploring an electric car or a self-driving one, but over the summer, documents revealed that Apple was on the hunt for a private facility to test something – presumably a car, since that facility is a former naval station where other self-driving vehicles have been tested. Then in August, Apple execs met with California Department of Motor Vehicles reps to discuss the state's self-driving vehicle regulations.

Apple has been interested in cars for some time – that's why the company developed CarPlay, which puts the iPhone experience in your car's dashboard. We wouldn't be surprised if Ive designed the coolest car on the block – we're just not expecting it anytime soon. **Caitlin McGarry**



Smart Battery Case extends iPhone's life

Case boosts iPhone's battery life by 80 percent

Sure, it's just an iPhone battery case, but what marks this one out from the many others is the manufacturer: Apple. The £79 iPhone 6s Smart Battery Case is the first sign that Apple is ready to acknowledge that its phones are too thin to contain adequate batteries. The case adds 80

percent to the battery life – and about 100 percent to the thickness – of an iPhone 6 or 6s.

Unlike most third-party battery add-ons, the back of the case isn't flat, but has a bulge in the middle housing the battery.

Apple claims the iPhone 6s allows you to surf the Internet on LTE for “up to” 10 hours, a figure that could reach up to 18 hours with the external battery. The battery could also boost talk time from up to 14 hours to around 25, while video could play for up to 20 hours rather than 11.

The catch is in the words “up to” – and Apple is by no means unique in using them: Pretty much every electronic device manufacturer does the same.

If you spend your days in an office with subdued designer lighting in hyper-connected Silicon Valley, where the nearest cell tower is no more than a few hundred meters away, you're going to get something close to the maximum theoretical battery life as your screen dims and the phone whispers to the nearby network.

For the rest of us, lighting is harsher and cell towers more distant, so our phones crank up the brightness and shout to the network, draining their batteries all the faster. That “all-day” battery can often be empty long before it's time to go home.

It used to be possible to keep a spare phone battery for situations like that, but one of Apple's innovations with the first iPhone in 2007 was to make the battery





non-removable, a feature it has replicated in every model since, and which other manufacturers have since adopted, too.

One justification given for using non-removable batteries is that without the need for a removable protective cover and clips to hold it in place, the phone can be made thinner – or the battery can be bigger for a given thickness of phone.

Until now, Apple has chosen the former course (as have other manufacturers), making phones ever thinner, frustrating many who would like to be able to use their phones for longer and who would barely notice if their phones were a millimetre thicker.

They'll certainly notice the additional thickness of the iPhone 6s Smart Battery Case, which appears to add about 7 mm to the 7.1 mm iPhone 6s, to judge by the photos Apple has released. Had

Apple chosen to make the iPhone 6s that much thicker to begin with, it may well have been able to boost the phone's battery life by 400 percent, not 80 percent.

Maybe it just wants a slice of the profit that the many other manufacturers of external battery cases are making – or maybe Apple is testing customer acceptance of a thicker new phone. **Peter Sayer**



Image courtesy of Lukas Baxa at 3dFuture (3dfuture.net)

Latest iPhone 6c news

We round up all the latest iPhone 6c rumours

In September 2015 Apple's iPhone 5c turned two years old, and that led to questions about whether it'll be the first and last model of the colourful, plastic iPhone. Earlier in 2015, we were worried that Apple had decided to ditch the 'C' range from its iPhone line-up, but reports keep on appearing suggesting that an smaller iPhone 6c (or iPhone 6s mini) might launch in 2016. Here, we've gathered all of the latest iPhone 6c rumours, including release date, design, specs and features speculation. We've also got iPhone 6c concept images and mock-ups.

In the run up to the September 2015 Apple event at which we saw the launch of the iPhone 6s Plus and the 6s there were a lot of rumours about those phones, but not so much about the iPhone 6c, the

hoped-for 4in successor to Apple's iPhone 5c, the 5s's (marginally) cheaper and more colourful sibling. However, there are also suggestions that the new iPhone could be a smaller version of the iPhone 6s – being available in the same metallic finish.

Release date

While there was no new 4in iPhone announced at the 9 September 2015 event this doesn't mean that a new 4in iPhone isn't in the works at Apple. Rumours have claimed for some time that the model will not appear until 2016, but the suggestion is that Apple will not completely abandon the popular 4in form factor.

A rumour in mid November 2015, suggested that the 4in iPhone 6c had started production. Japanese site Mac Otakara also claimed that what will potentially be the new entry iPhone has already entered production and would soon start shipping.

Another rumour in December 2015 from Chinese website TechWeb suggested that the new iPhone 6c (or iPhone 6 mini) could arrive in February 2016, just in time for Valentine's Day. According to the report, supply chain sources are claiming that the iPhone 6c is on track to debut in February 2016 (translation). However, that report also suggested that the phone may not arrive until the middle of 2016 (which could suggest a WWDC launch).

A February launch date might only make sense in tandem with the launch of the Apple Watch 2, for which a romantic Valentine's Day launch could make sense (with the emphasis on the heartbeat sharing). But a March or April launch seems more likely – given that the Apple Watch launched in Spring 2015.



The iPhone 5c was a hit with consumers

We really can't see Apple holding an event to launch the iPhone 6c without backing it up with the launch of the Apple Watch 2 and perhaps the iPad Air 3.

In early 2016, Chinese network China Mobile 'leaked' details of the launch of a new 4in iPhone handset in a presentation, although the fact that the device is referred to as iPhone 7c suggests to us that this could be wishful thinking on their part.

According to the presentation the device is said to launch in March or April 2016, another reason why we don't think the phone will be referred to as the iPhone 7c (the iPhone 7 is unlikely to launch before September).

DigiTimes sources suggest the device will launch in the second-quarter of 2016. However, DigiTimes doesn't always stick to the same story, another report from that site, published in early December 2015, suggested that component suppliers to Foxconn, the company that it tasked with building

the new iPhone, believe that the new iPhone will be the iPhone 7c and it will arrive in September 2016, according to Mic Gadget.

And this view is shared by Piper Jaffrays' Gene Munster who doesn't think that the new smaller iPhone will arrive in the Spring. He thinks it will arrive alongside the iPhone 7 Autumn 2016. "If a 6c does launch, it seems more likely to come out with the iPhone 7 in fall 2016 rather than in early 2016," Munster said, according to a report on Apple Insider.

However, he does concede that an iPhone 6c could arrive alongside a new Apple Watch. He said: "Further, we believe a smaller iPhone would not seem to have enough clout to carry a special event by itself, thus if it were to launch in early 2016, we believe it would have to happen in conjunction with the new Apple Watch, as that seems to be the spring event moving forward."

Design

Some iPhone 6c mock-ups, such as those from 9to5Mac (9to5mac.com) opposite, have appeared, showing new metallic colours and appear to be influenced by the iPod touch, with curved corners.

A TechWeb report in 2015 suggested that the iPhone 6c will sport a colourful metal body, this is contrary to the opinions of various analysts who claim that while the new iPhone 6c will not have a plastic case like the iPhone 5c. It will have the same design and colours as the iPhone 6s, just smaller, according to KGI Securities analyst Ming-Chi Kuo.

Kuo, who has made iPhone 6c predictions before (see below), states that there is "still demand for



a 4in iPhone, we believe Apple will upgrade this product line”. He thinks that rather than replace the iPhone 5c, though, the company will use the design of the iPhone 6s because it is far more popular.

Like KGI Securities analyst Ming-Chi Kuo, analyst Shaw Wu also claims that the new iPhone 6c with a metal case won’t arrive until the first half of 2016.

The Mac Otakara report suggest that the iPhone 6c will be a rebadged and redesigned iPhone 5s, rather than a direct sibling to the 6s.

The claims the iPhone 6c will be more like the 5s than the 5c have been long running. Some time ago Jefferies analyst Ange Wu claimed Foxconn and Hon Hai would benefit from the metal casing business, causing shares of Foxconn to surge at the time.

Wu thinks that the metal case is likely because it represents Apple’s “style” and helps differentiate iPhones from other smartphones, notes a Barrons Asia report.

Colours

Earlier in 2015 Apple updated the iPod touch with a new range of colours – can we expect to see the iPhone 6c share the same colour palette? The specs of the previous iPod touch model were iPhone 4s-era, now that the iPod touch sports the A8 and M8 processors it's more akin to the iPhone 6 and 6 Plus – apart from the fact that it's got a 4in display.

There is quite a price difference between the iPhone 5c and the iPod touch with the touch costing exactly half the price of the iPhone, despite having twice the storage (as well as a faster processor now):

- 8GB iPhone 5c, £319
- 16GB iPod touch, £159

Of course, the iPhone 5c can be used with 3G or 4G, while the iPod touch relies on Wi-Fi for web access. Could Apple instead launch an iPod touch capable of cellular connectivity, kind of like the iPad mini. If it did that it would practically be an iPhone 6c.

Alternatively, the iPhone 6c could come in a colour scheme to match the Apple Watch Sport straps – as you can see opposite, the colour scheme of the iPhone 5c wasn't that different to the Watch.

The 5c was available in the following colours: yellow, blue, pink, green and white. Apparently the yellow version is the least popular with pink being the most popular and blue the second most popular (apparently around half of all iPhone 5c sales are the pink model.)

The Apple Watch Sport straps come in blue, pink, green and white colours, which as you can see from the image below, match the iPhone 5c. You'll



notice that Apple hasn't made a yellow watch strap – probably because that colour is so unpopular. This suggests that we will not be seeing a yellow 6c.

New Watch straps have since been introduced, including an Antique White version and a Product Red version. There is also a black sports strap available for the Watch – suggesting to us that Apple may launch an iPhone 6c in black. We think a black iPhone 6c will be very popular.

Price

The question is will the phone be priced higher if it has a metal casing than if it had a plastic casing?

Prior to the launch of the iPhone 5c much of the talk was about Apple launching a cheaper iPhone, although in the end it turned out not to be quite a cheap as people had hoped.

Until September 2015 the iPhone 5c was sold at a low(ish) price, but we'd prefer it if it was 16GB rather

than 8GB. Before it was removed from sale, 8GB iPhone 5c costs £319 new from Apple (cheaper on a contract). We'd like the new iPhone 6c to come in at £299, the same price as the Apple Watch.

There are suggestions that if Apple launches an iPhone 6c it will be cheaper than the iPhone 5c was at launch, addressing the demand for a lower entry-point iPhone, but we think this is wishful thinking.

For example, TechWeb claims that Apple is trying to keep the price low in the US, with the handset starting somewhere between \$400 (£272) and \$500 (£340), which is less than the iPhone 5c's starting price was when it launched.

Another consideration is that the new iPhone 6c will be a replacement for the iPhone 5s, currently selling for £370 for 16GB or £419 (32GB). So perhaps we can expect a price nearer that level, potentially even higher since it would be a new phone.

Does Apple need a cheaper iPhone to sell alongside the Watch to offer a low-cost of entry way into the world of wearables? In contrast to this, at the end of last year in the US, Apple was offering a discount on an Apple Watch if it was bought with an iPhone.

Display

A source claims that AU Optronics will apparently be producing the 4in screens, according to GforGames.

Apple analyst Kuo doesn't think the iPhone 6c will offer 3D Touch support, writes MacRumors. However, a Mac Otakara report indicates that the 6c may include 3D touch, as introduced with the 6s.

According to DigiTimes the new iPhone 6c will use Gorilla Glass.

Touch ID

We think that Apple wants to move all its products over to Touch ID so we expect the new iPhone 6c will offer this feature. A TechWeb report suggest that the iPhone 6c will offer Touch ID (so it will work with Apple Pay) but not 3D Touch.

Now that Apple has launched Apple Pay in the UK, it seems likely that Apple's strategy moving forward will be to offer Apple Pay to more and more customers, and doing that is likely to include making sure that all current iPhones have the ability to be used for Apple Pay - as a result we expect that the entire line up of iPhones in September are likely to offer Touch ID and NFC, so it will make sense for Apple to rebadge and repackage its entry-level iPhone. Earlier this year claims were made that the iPhone 6c would gain NFC and Touch ID, according to a DigiTimes report.

Camera

The iPhone 6c will also offer an improved FaceTime HD camera with a f2.2 aperture, according to rumours.

We had expected that the iPhone 6c would be a repackaged iPhone 5s, with the same camera as that phone, however, a report from GSM Dome suggests that Apple has placed an order for camera parts for a 4in iPhone – presumably the rumoured 6c. The order is said to be with Sony and is for a significant number of camera sensors destined for the 6c.

According to the report, two Chinese analysts (one of whom is chief analyst at



Electronic System Design China) claim that Sony can only meet 50% of demand for camera sensors because so many have been bought up by Apple for the new phone.

It's not clear why these camera sensors are destined for the 4in iPhone 6c and not another new iPhone, but it would appear that the analysts believe the camera is destined for the plastic iPhone.

Another indication that the iPhone 6c may get a new camera can be seen on the back of what are said to be leaked images of the iPhone 6c. The new flash on the back of the leaked iPhone 6c models, as seen in the photograph below, suggests that Apple will be tweaking this phone.

Apple has also been issued patent for a “digital camera with light splitter”. Apple’s system would split up red, green and blue light and send each to a dedicated sensor. This should mean images are clearer and sharper, however, this new camera is likely to only appear in the newer iPhones

Processor

The iPhone 6c is said to have an A8 processor, according to DigiTimes. That’s the same processor as is found in the iPhone 6 and 6 Plus, while the iPhone 5s uses the A7 processor.

A Mac Otakara report also suggests the new smaller model will use the A8 processor, rather than the A9 processor found in the iPhone 6s.

However, this contradicts Kuo who claimed that the new 4in iPhone would use the newer A9 chip.

According to DigiTimes semiconductor industry sources, the device will use 14/16nm FinFET chips manufactured by TSMC and Samsung. This is a

change to the original plan to use 20nm chips. Apparently the smaller chips will enable a specs upgrade and lower power consumption.

A report from KGI in January 2016 also predicts that the new 4in device will offer an A9 processor, as well as 16GB of storage, NFC, Touch ID, and 2GB of RAM.

Bluetooth

The new iPhone 6c will include Bluetooth 4.1, according to reports.

Battery

Apple is hiring experts to work in its battery division. According to a report on Apple Insider, Apple has advertised nine positions within the last month, some of which are explicitly oriented towards iOS devices, according to the site. However, any new battery technology is unlikely



to make it in to the iPhone 6c, instead we expect that this phone will offer the same battery life as the iPhone 5s does currently.

A leaked image of the battery (see page 29) that will apparently features inside the iPhone 6c has appeared on French website, NoWhereElse.

It's a 1715mAh battery, which is better than the 1510mAh battery in the iPhone 5c, but smaller than the iPhone 6 1810mAh.

It may also have a bigger 1642mAh battery, according to some Chinese reports.

Martin Hajek's concept image

Back in 2015 Martin Hajek (martinhajek.com), famous for concept designs of new Apple products, came up with some images of what he thinks the new iPhone 6c will look like. His designs are metal – not plastic like the iPhone 5c. **Karen Haslam**





20 tips for your iPhone

The 20 best iPhone tricks you didn't know existed

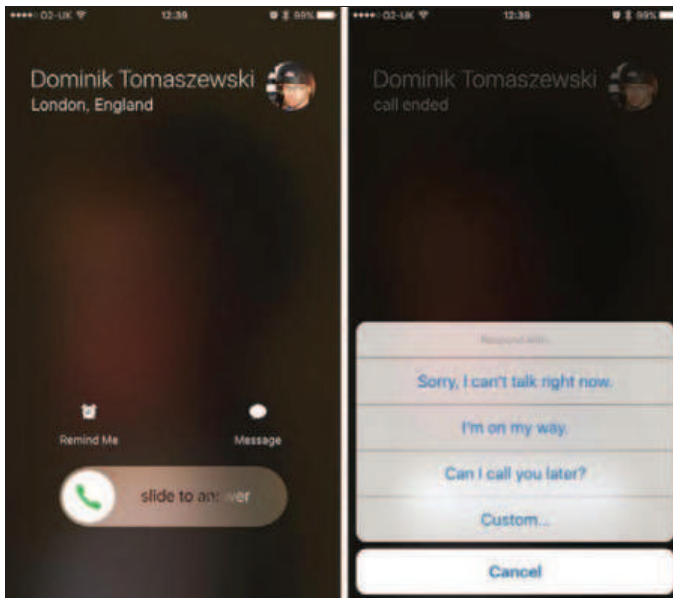
The iPhone is an impressive tool with hundreds of brilliant features, but there are several hidden features and tricks that you may not have realised existed – until now. Here, we've picked our favourite iPhone tips and tricks that can help you achieve things quicker and easier, and you'll wish you'd known about them a long time ago.

1. Create custom iMessage replies for calls you can't answer

Sometimes it's not the right time for a phone call; and while you could just let calls you don't want to take go to voicemail, sometimes you want to explain why you're not picking up. iOS let you quickly respond to a call with a text message.

Depending on which version of iOS you're running, you either swipe upward on the phone icon that appears next to the unlock slider and choose Respond With Text, or tap the button labelled Message above the Slide To Answer slider.

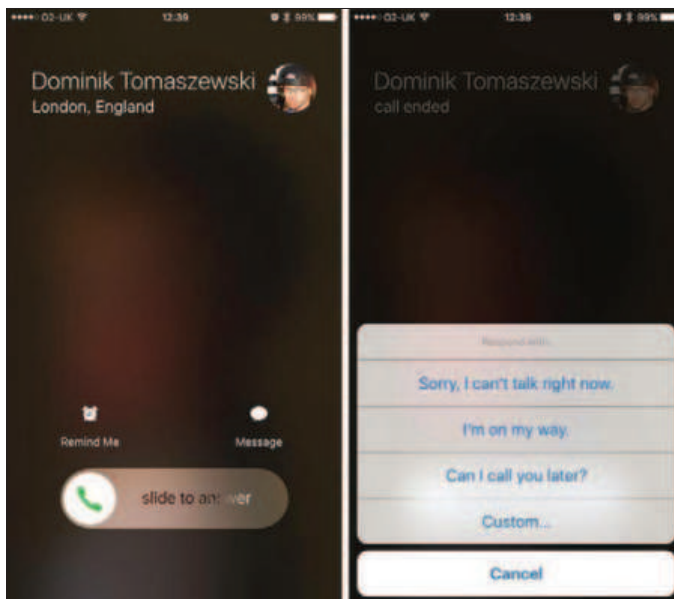
By default, you'll get three pre-written options ("Sorry, I can't talk right now", "I'm on my way" and "Can I call you later?"), along with a button that lets you enter text there and then. However, you can customise the prepared messages under Settings



> Phone > Respond With Text. You can't have more than three, however: if you want to add a new one, you'll have to sacrifice one of the current options. Tap the one you're willing to lose and type in the new response.

2. Skip calls with Remind Me Later

Alternatively, you can get iOS to remind you to call back later. As with the auto-replies, the way you do this depends on your version of iOS: in iOS 9 you tap the Remind Me button above the slide, but in earlier versions you swiped upwards and selected Remind Me Later. You can choose to be reminded in an hour, 'When I Leave' or 'When I Get Home'. Make sure your address details are up to date in Contacts, so your iPhone knows where home is. The timings will be based on your GPS movements.





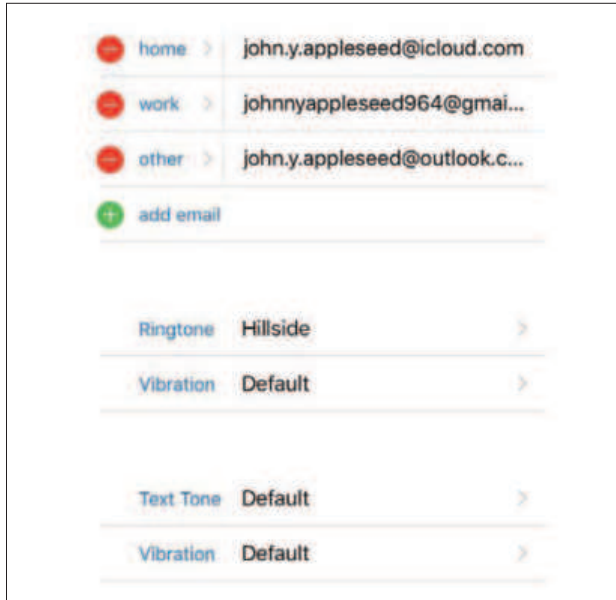
3. Create custom ringtones and alert tones in iTunes or GarageBand

You can create ringtones for your iPhone based on any music track in your iTunes library. We looked at this in depth here (the tutorial includes a video to walk you through the process), but to sum up: create a short, sub-30-second duplicate version of the track; convert the file type of this track from .m4a to .m4r; reimport the track to iTunes as a ringtone; sync the ringtone with your iPhone.

Better still, you can create unique custom iPhone ringtones from your own audio creations, and this is especially user-friendly if you do the creative work on the iPhone itself. Create a 30-second track in GarageBand; go to the Share options and choose Ringtone; then assign it to a contact or notification.

4. Set custom vibrations on your iPhone

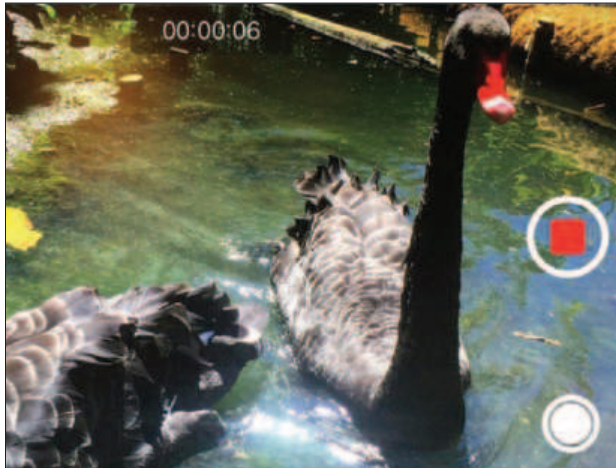
Want to know who's calling you without taking your phone out of your pocket? That's easy – assign a



ringtone to a contact. But what about doing it all silently? Not only can you assign a custom ringtone or text tone to a contact, you can even give them a custom vibration pattern.

Open Phone or Contacts; select a contact, then tap the Edit button in the top-right corner. Scroll down to find the ringtone field; below it is a vibration field. Tap that, and you'll see an assortment of built-in vibration patterns you can choose from. Further down, though, is the ability to add a custom pattern: tap Create New Vibration, and you can tap on the screen to create your own rhythm. When you're satisfied (tap the Play button to see what it will feel like), tap Save to set the pattern.

If that's not enough, you'll need to go back to the contact and also assign a custom vibration pattern for text messages.



5. Take photos while shooting videos

You're using your iPhone to film a magical moment, and you wish you could snap a photo at the same time. Don't stop recording! Just tap the camera button, which appears on-screen in addition to the shutter button as you film.

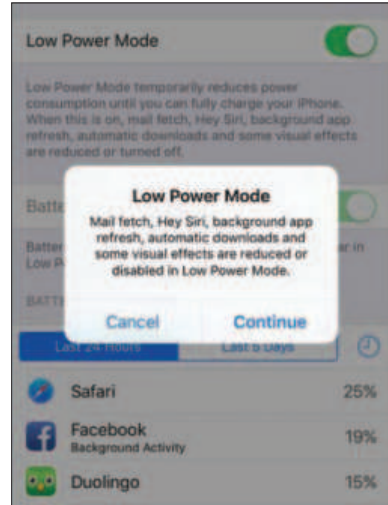
You aren't using the iPhone's true photo sensor; you're getting the slightly less impressive video sensors instead, but the photos should still turn out pretty nicely.

6. Save battery with Low Power Mode

If you know you're going to be using an iPhone for a long time, then switch to Low Power Mode by tapping Settings > Battery > Low Power Mode.

Low Power mode reduces consumption by turning off a number of iPhone features. Mail fetches less frequently (push is turned off), Hey Siri is turned off, background app refresh is turned off and some visual effects are reduced. The screen goes

dark after a shorter period of inactivity. You may not notice the difference (although you may not get a vital Mail or Social Media message unless you check for it). On the whole, though, the iPhone works as normal and the battery will last for much longer.



7. Save PDF to iBooks

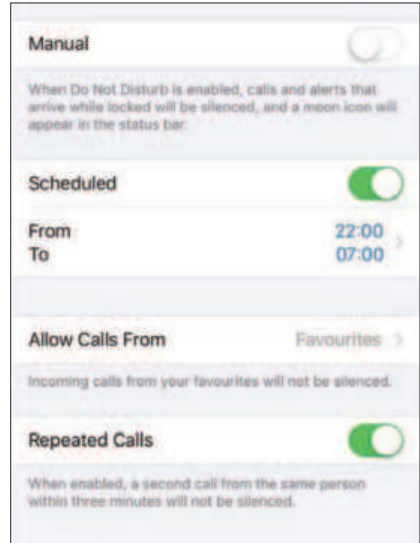
You can turn web pages into PDFs and add them directly to your iBooks app. This is handy if you're reading a long web document, or especially if you've found a HTML book online and want to keep a copy of it. When you tap Share, scroll across the apps to find Save PDF to iBooks. Tap it and the web page will be converted and added to your book collection.



8. Set up Do Not Disturb mode

Are you using the Do Not Disturb feature? It's perfect for insulating you from distractions where you're trying to work, or get some sleep.

Do Not Disturb can be activated from the Control Centre; swipe upwards from the Home screen (or from within apps, if you've allowed that feature) and tap the crescent moon icon in the top row of options. A matching moon icon will then appear in the top bar of your iPhone screen. (Can we take a moment to appreciate how elegantly this top icon 'waxes' and 'wanes' when switched on and off?) With Do Not Disturb activated, incoming calls and alerts will be silenced.



This is the simple, manual method for activating Do Not Disturb, but we can get more sophisticated than that. Go to Settings > Do Not Disturb (in the second bank of options), and you'll see a range of options, including the ability (under the label Scheduled) to set 'quiet hours' each day or night.

9. ...unless it's an emergency

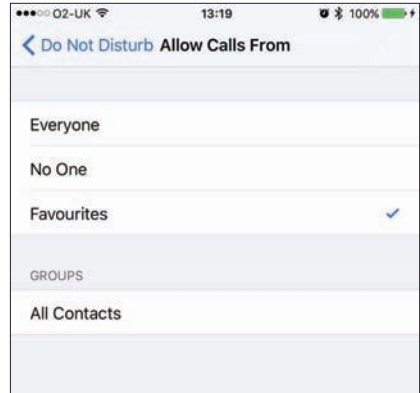
Do Not Disturb is very handy, but you might worry that it's preventing an urgent message from getting through. But you can set up exceptions for peace of mind.

Switch Repeated Calls to ON and you'll be alerted to a second call from the same person within three minutes. You may get the odd trivial call breaking through, but most midnight callers get the hint if their

victim doesn't pick up first time. Someone with urgent news would be far more likely to try again.

You can also specify exceptions for certain people. Tap 'Allow Calls From' to allow this to be overridden by calls from Favourites.

(You can add people to the Favourites list in the Contacts app. Select a contact, scroll down to the bottom of their listing and tap Add to Favourites. But removing a contact, or changing the order in which Favourites appear in 3D Touch sub-menus and the like, can only be performed from the Phone app - select the Favourites tab along the bottom and tap Edit at the top of the next screen.)



10. Quickly add symbols

You've probably been using your iPhone's keyboard for ages without realising that it's actually easier than you thought to add symbols to your messages.

Instead of tapping once on the 123 button, once on your chosen symbol and then once again on the ABC button to go back to the conventional keyboard layout, you can do the whole thing in one gesture.

Tap and hold the 123 button, slide your finger to select the symbol you want to insert, then release. Once it's been added, your keyboard will automatically revert back to the letters keyboard. One tap instead of three: that's some serious time savings right there.

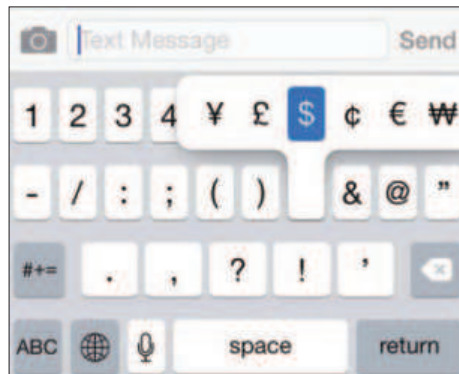


Oh, and while we're talking symbols: hold your finger on the symbol for a second or two and you'll see any alternative (usually related) symbols that the button can offer instead. The dollar key also offers pound, euro and yen symbols, for example.

There are many additional symbols hidden within your keyboard that you may never have discovered.

11. Double-space for full stop

This one might sound simple but it's a tremendous time saver that a surprising number of iPhone owners still don't know about. Instead of going to



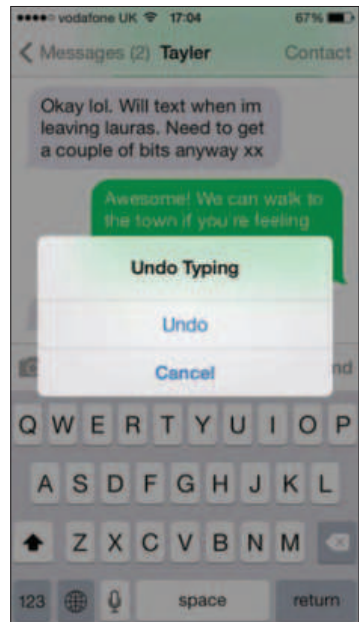
the symbol menu to find a full stop at the end of a sentence, you can just double-tap the space button. It'll add a full stop to the end of the word you've just typed, then a space, and then set you up ready to begin the next sentence with a capital.

(You don't have to do this particularly rapidly, but if you leave a lengthy pause between the spaces this doesn't work – iOS grudgingly accepting that you do want to type two consecutive spaces like some kind of grammatical barbarian.)

12. Shake to undo

This one can be a little awkward at times but it can be a bit of a life saver. If you've just typed a long sentence and accidentally deleted it, or made some other catastrophic error, you can give your iPhone a shake to bring up the undo/redo dialogue box. Just make sure you're holding on to your iPhone tightly before you shake it.

Since implementing this feature Apple has added an undo button to the system keyboard, thankfully, but this only appears when the iPhone is in landscape mode. If you can't be bothered to type like that, get shaking.



13. Tap to top

Just scrolled down a really long list in Notes, or worked your weary way through a ton of

emails? Instead of laboriously scrolling back to the top, you can jump there immediately by tapping at the very top of the iPhone's screen. We'd rank this tip with the double-space full stop: it's reasonably widely known, but for everyone else it's a game-changer.

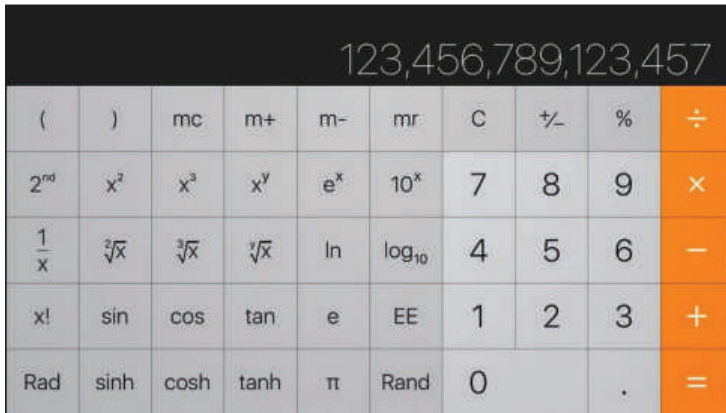
And it's not just Notes and Mail; tap to top works in most iPhone apps. (It doesn't work in the ESPNcricinfo app, we've noticed, but that app offers a little upward arrow icon that does the same thing. If tap to top isn't working, check for some equivalent function.)

Some apps, cleverly, offer an undo on this function, just in case you tap it by accident and lose your place in a long article. The excellent Instapaper pops up a Return to Position command, for instance – and if the menu bars have disappeared you have to tap the top of the screen twice to activate the feature in the first place. Experiment to see if the app you're using offers some other variation on or evolution of this handy feature.

14. Quick-delete in the Calculator app

If you use the calculator app a lot, you might like this handy and little-known time-saving trick. The Calculator app, like real-world calculators, doesn't have a delete button, which can be annoying if you've just typed out a long number and made





a mistake right at the end. Fortunately you can swipe across the number in the black area at the top – left or right, it doesn't matter – and for each swipe, a single digit will be removed from the end of the figure.

15. Stop music with a timer

This is a cool trick for those of you who enjoy falling asleep to music. The problem with that is it'll still be playing when you wake up in the morning, and you've probably just drained most of your battery in the process. Using the hidden 'Stop Playing' timer, you can choose how long you want the music to play for as you drift off to sleep.

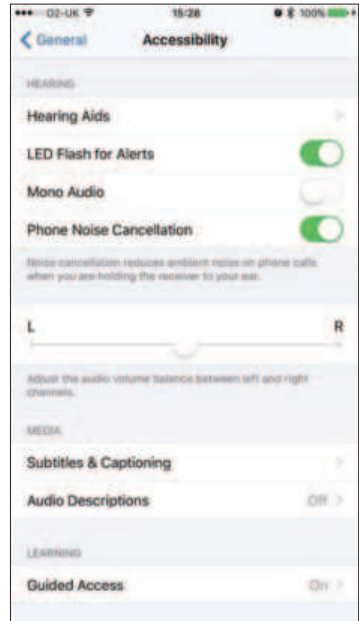
To set up the timer, go to the clock app and then tap 'Timer' in the bottom right of the screen. (You can access this from Control Centre: swipe up from the bottom of the Home screen and tap the stylised clock face on the bottom row.) Choose how long you want your timer to last for and then tap 'When Timer Ends'. Scroll down to the bottom of the menu and select 'Stop Playing'.

Press start on the timer and then begin playing your music from the Music app. When the timer ends, the music will fade to a stop. This trick will also work for audiobooks and other media.

16. Get your iPhone's flash to blink when you get a message

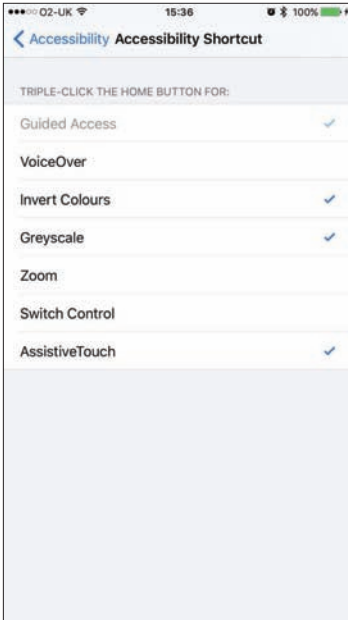
If you find that the vibration or sound that your phone makes when you get a message is not always enough to attract your attention, there's another element that you can add to the alert: light. By going to Settings > General > Accessibility and scrolling down to the 'Hearing' section (this feature is designed for people with hearing impairments), you can turn on 'LED Flash for Alerts'.

Now every time you get a notification, the flash next to your iPhone's rear-facing camera will blink.



17. Triple-click Accessibility shortcuts

Another accessibility setting that could come in handy is the Accessibility Shortcut, which can be found by going to Settings > General > Accessibility and then scrolling right down to the bottom. Tap 'Accessibility Shortcut', and you'll see a menu of options. Ticking selected features in this list allows you to activate them easily by triple-clicking the Home button. You can invert the colours of your



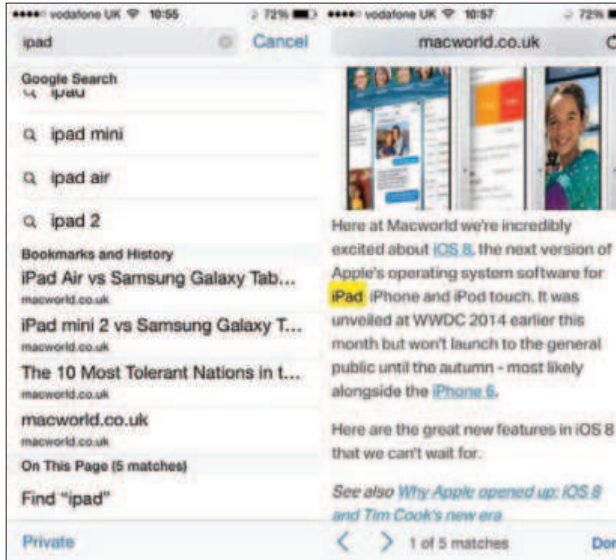
iPhone for better visibility in low-light, zoom in to tricky-to-see parts of the screen and more.

(If you've selected more than one accessibility feature to be accessible via triple-click, a dialogue box will pop up and ask which one you want – it doesn't apply them en masse.)

18. Find words or phrases on a web page

If you're looking for a particular word or phrase on a web page, you can find it by typing the word or phrase in the URL/search bar at the top of the screen. (As soon as you tap on the top bar the page you were on will be replaced by a screen filled with your Favourites, but don't worry – you're still on the web page. It'll return as soon as you tap off the top bar or run the in-page search.) You'll see a list of web search results – and search results from the App Store, Wikipedia and so on if applicable, but you need to look at the bottom of that list for a section labelled "On This Page", with the number of matches.

Tap it, and you'll see that the results are highlighted on that particular web page in yellow.

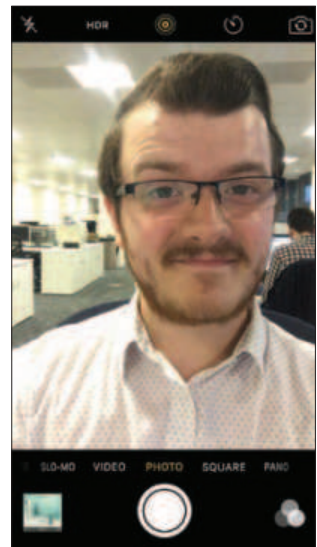


Tap the arrows at the bottom of the screen to go to the next instance.

19. Use your headphones to take a selfie

Selfies continue to be all the rage, as we're sure you've noticed, but if the quality of your selfies is a concern, try this handy trick.

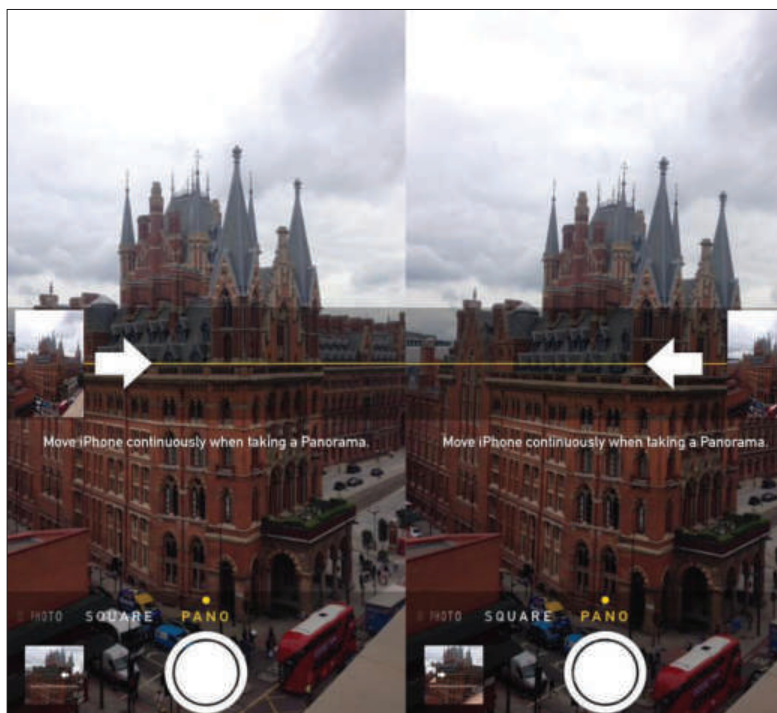
A decent proportion of iPhone owners know that you can activate the camera shutter by pressing one of the volume buttons (volume up or volume down – doesn't matter which) instead of the onscreen button. This tends to produce less camera shake. But a still better option for selfies – and one that is far less widely known



– is to use the volume button on an attached pair of headphones. When the camera app is open on your iPhone, you can use the volume button on an attached pair of headphones to take a photo. Not only does this reduce shake even more than using the iPhone's volume button, but it also means you can take a more natural-looking photo from further away or take a photo hands-free.

20. Switch direction in Panorama mode

You can change the direction of your Panorama photograph in the Camera app by tapping the arrow that appears in the middle of the screen in the Panorama mode. **Ashleigh Allsopp**





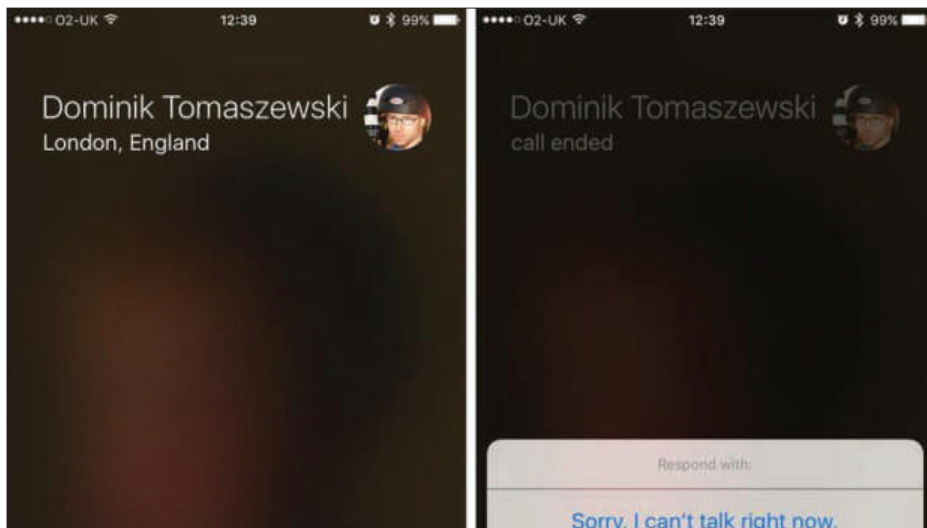
40 tricks for your iPad

Get more from your iPad with our top iPad tips

Since the iPad launched back in 2010, it has been the go-to choice for millions of consumers around the world. Like with any product, you have to know the ins and outs to get the most of the iPad – and here, we list 40 of our top tips for using your iPad. The tips range from beginners tips to tips that even masters of iOS were unaware of. Either way, we feel confident that at least some of the iPad tips and tricks we'll be revealing will be new to you will be helpful.

1. Change the wallpaper on your iPad

You can (of course) easily change the wallpaper of your iPad, both on the lock screen and home screen. Simply head to Settings, tap 'Wallpaper' and then tap

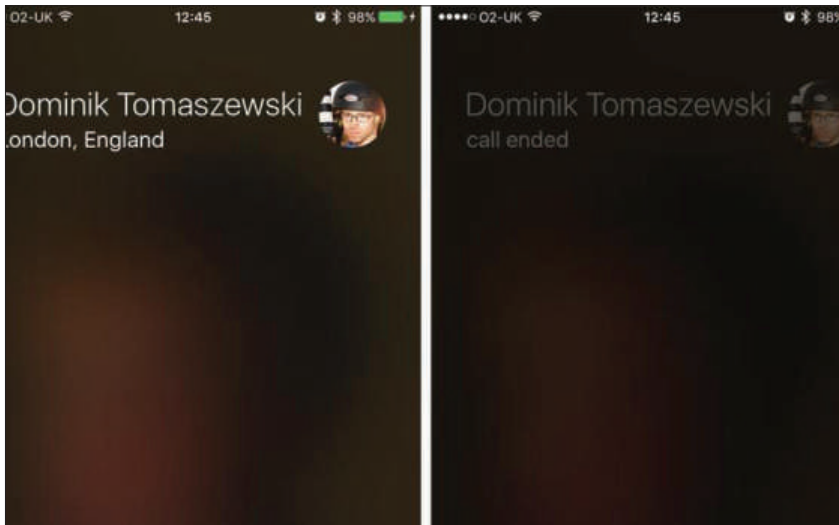


‘Choose a New Wallpaper’. You can browse from a selection of Apple’s own wallpapers, with ‘Dynamic’ wallpapers moving slowly in the background, or browse for a photo from your photo library.

Once you’ve found the wallpaper you’d like to use, tap it to bring up a lock screen wallpaper preview. From here, you can preview what your wallpaper will look like, along with specifying whether you want to set it as a universal wallpaper, or if you want it specifically for the lock screen or home screen.

2. Manage storage on your iPad

Maybe your iPad won’t let you snap another image. Perhaps it refuses to let you download one more app. Because iOS storage space isn’t expandable, it’s important to monitor what’s gobbling up the available gigabytes on your device. Here’s how. Go to General > Storage & iCloud Usage > Manage



Storage in Settings, and wait for a moment or three as iOS calculates which apps are using the most space internally and in iCloud.

Often, Music and Photos & Camera are the two biggest offenders. If you use a service like Apple Music or Spotify, you can safely delete the Music cache on your device to free up space. If you back up photos and videos to your PC or Mac, you can delete them, too.

Elsewhere on the list, you'll see the apps you use, sorted with the most storage-intensive ones at the top. If apps that you rarely use take up a lot of space, tap on them in the list, then tap Delete App to remove them in an instant.

3. How to set up location-based reminders for specific locations

If you want to be reminded to do something when you leave your home, work, current location, or any address in your address book, that's pretty easy to get with iOS's Reminders app. But what if you want to remember to buy something when you're at the shops? You probably don't want to add their locations in your address book just to get that feature. Fortunately, you don't have to. When you create a reminder, tap it and turn on Remind Me at a Location. By default, Reminders will populate your current address – tap that and you'll get a host of options, including, at the bottom, a text box to enter a custom address.

4. Get your iPad to read to you

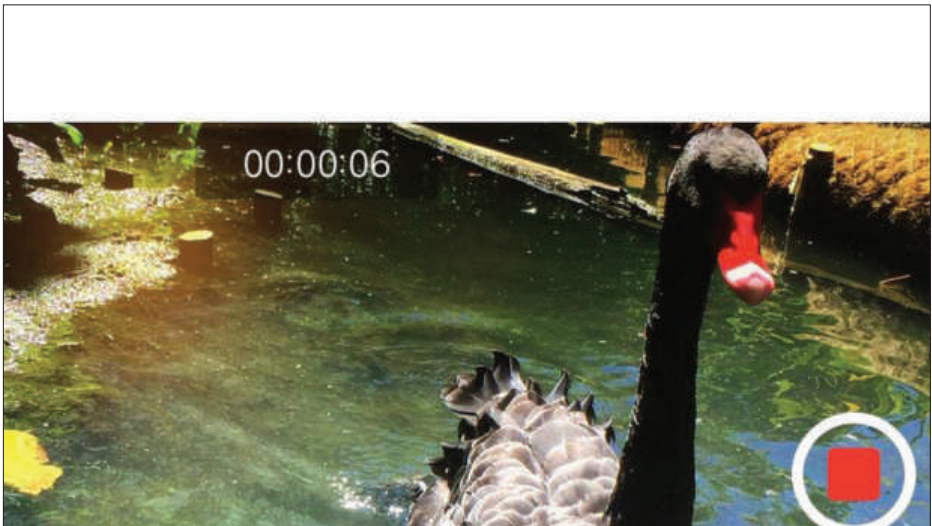
Enabling the Speak option makes it possible for your iPad to read aloud any selectable text. Go to

Settings > General > Accessibility. Scroll down to Speak Selection, and tap to turn it on. You can also adjust the speaking rate, choose from a wide variety of voices and highlight words as they are spoken.

Now, go into any app that lets you highlight text. Your options include Mail, as well as Safari, Notes and a fair few others. Select some text, and you'll see a new option appear in the contextual menu (you may have to tap the right arrow to view more options). Tap the Speak command, and your iOS device will start reading the text aloud.

5. Enable the Emoji keyboard on your iPad

The Emoji keyboard lets you insert all kinds of fun images wherever you can type, including the recent additions of tacos, unicorns and the middle finger. Your iOS device can speak the names of those symbols, too. Perhaps you've seen these iconographic symbols in emails, iMessages and



tweets, and wondered how on earth people managed to type them. Maybe you've mistakenly assumed that you need to purchase a third-party app to gain access to those special symbols.

You don't: Apple treats those symbols, called Emoji, as an international keyboard. Go to Settings > General > International > Keyboards. Then tap Add New Keyboard and find Emoji. Now open an app where you can type some text.

Next to the spacebar, you'll see a little globe icon. Tap it to switch between your normal keyboard and the Emoji one.

6. Multi-task on an iPad

Now, this tip only applies to those using fairly recent iPads – and by recent, we mean iPad mini 2 or later, iPad Air or later and, of course, the iPad Pro. The multi-tasking features are split into three groups; slide over, split view and picture-in-picture. All iPads mentioned can use slide over, which brings up a small side pane (using 1/3 of the screen) displaying an iPhone-esque app, alongside the first. You can then change the app by swiping from the top of the app, and selecting a new one. The only downside is that you can't interact with both apps at the same time, and if you want to use the app you originally had open, you have to close the 'slide over' app first.

Split view is more impressive, but is limited to the iPad Air 2, iPad mini 4 and iPad Pro. When using slide over, applicable users can 'pull' the app into a split screen mode where both apps can be used at the same time, and the amount of space can be adjusted by tapping and holding the divider between the apps.

Finally, 'Picture-in-picture' mode allows recent iPad users to watch videos or FaceTime people while using other apps. When in a FaceTime call, or watching a movie (not just in Videos – some third-party apps are supported) simply tap the home button and the video will be minimised and displayed in the bottom corner of your iPad. Feel free to drag it to the other corners of the iPad if needed, and pinching the video will expand it.

7. Tap to top

You won't believe how much time this will save you. If you're halfway down a web page in Safari, tap the top bar to jump back to the top of the page. Try it in other apps too - lots of them, third-party apps included, use this navigational trick.

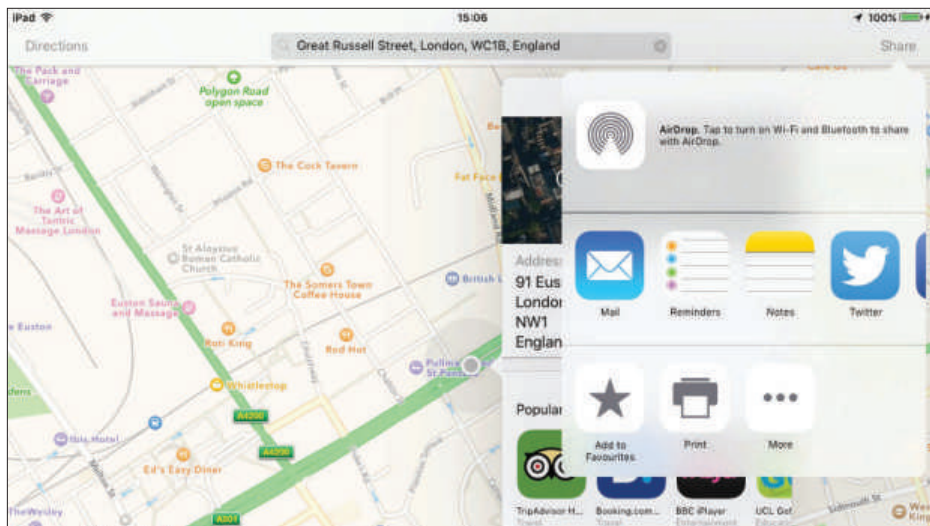
8. Take photos with volume

Did you know you can take photos using either of the volume buttons? Their location is much more convenient when shooting in landscape mode, especially when using an iPad.

9. How to share your current location

With iOS, it's easy to let loved ones know where you are at any given time – and this can be achieved in a number of ways. First of all, you can open Maps, tap a pin (or your current location marker), tap the arrow, and finally tap the Share button. You can then choose where to share your location to, with options including Messages, as well as Facebook and Twitter (which we wouldn't recommend).

Of course, that method becomes irrelevant if you want constant location information. For that, you



have to open Find my Friends and invite the person you want to share your location with, by entering their Apple ID when prompted. Once accepted, they'll be able to see your location whenever they desire – unless you disable Location Services.

10. Download a track from Apple Music

Apple Music users can stream music from the internet to their mobiles wherever there's signal – but what about when you're on the tube or on a plane with no connection? Thankfully, you can download any individual track from the streaming service onto your iOS device – just tap the menu button displayed next to each song in the 'My Music' tab and tap "Make available offline".

11. How to pull-to-refresh

To check for new emails within the Mail app, simply navigate to a mailbox view or the Mailboxes screen

(you can't force a refresh while viewing a message) then swipe the screen downward until you see a little refresh button (the one with the circular arrow) at the top. Keep swiping until that button stretches down and then 'snaps back' to a progress indicator.

12. Delete recent addresses

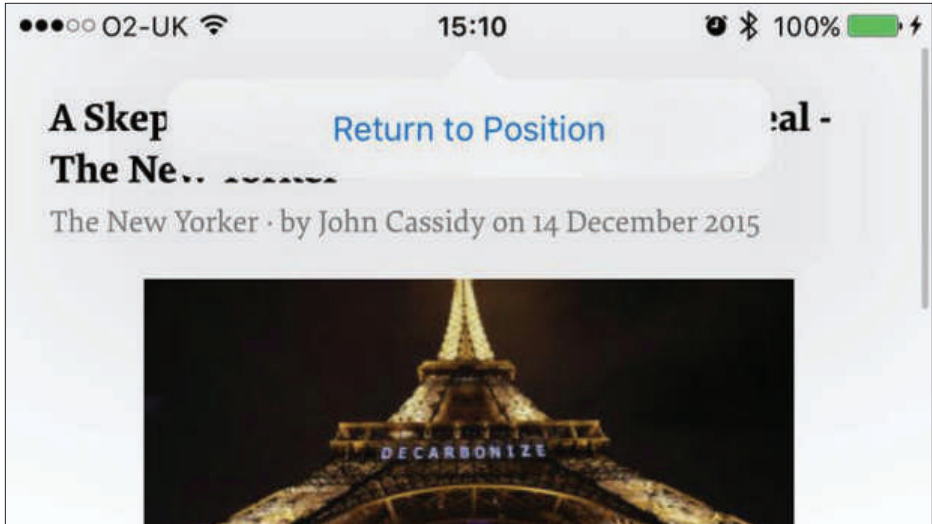
Mail has always been helpful with addresses, showing possible matches from your recent history and Contacts as soon as you start filling the 'To' field. With iOS 9, Mail also gained the ability to suggest contacts based on the people you usually email. As intelligent as it may be, there will be situations where you'll only email someone once and never want to contact them again, so it's best to remove them from your 'recent addresses' list.

Scroll down to the suggestion you want to delete. Tap the 'i' icon, then 'Remove from Recents'. You can't do this for those on your Contacts list, as they will always be suggested where relevant – if you want rid of them, you'll need to delete the contact.

13. Set a different signature for every Mail account

You'll be glad to know that you can edit the default signature (by default this would normally read 'Sent from my iPhone' or 'Sent from my iPad') for each of your email accounts independently, with little effort.

Go to Settings > Mail, Contacts, Calendars > Signatures, then choose 'Per Account'. This enables a separate signature field for each email account you've set up. Type or paste your preferred signatures, and Mail will automatically append them to each outgoing email message.



14. Flag messages in iOS Mail

iOS 9 offers top-level Mailboxes (VIP and Flagged) that each gather particular messages across all your inboxes and present those messages in one convenient list. They're great.

The Flagged mailbox displays any flagged messages – those you've marked with the dedicated Flag button. It makes it easy to quickly see your most important messages without having to scroll through other messages in your inboxes.

You can flag an email when you're viewing it by tapping the little flag icon in the top bar and selecting Flag.

15. Set VIPs and view VIP messages

iOS 9's VIP mailbox gathers messages from people you've designated as VIPs – your wife, your boss, your colleagues, your bookie... er... financial advisor – so you won't overlook those messages in the daily

flood of emails. To designate someone as a VIP, tap the 'i' icon at the right edge of the VIP mailbox (in All Mailboxes), then tap Add VIP and choose the person in your contacts list.

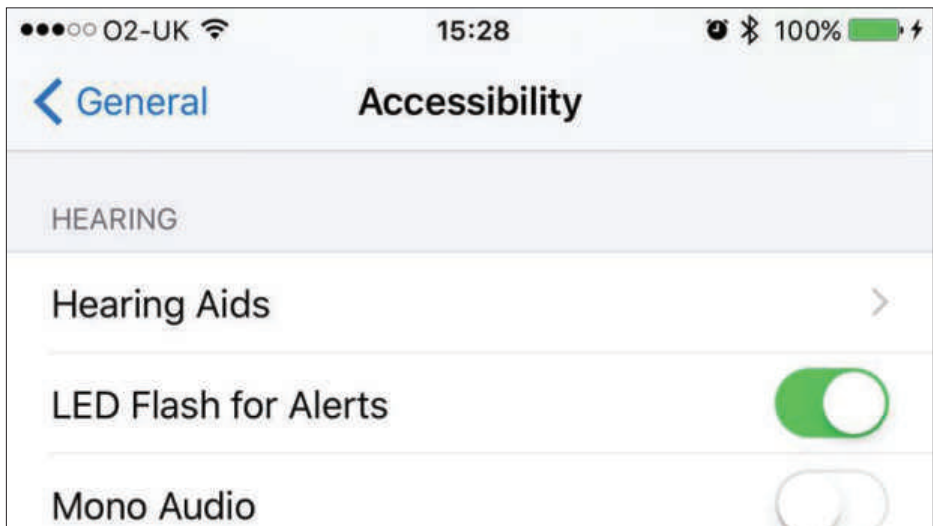
Alternatively, open an email from the person you want to add as a VIP, tap their name/email address and then tap 'Add to VIP' to achieve the same effect.

Tap VIP Alerts, and you're taken to Settings > Notifications > Mail > VIP, where you can configure notification settings for email received from VIPs.

16. Add photos and videos to messages

Suppose you snapped the perfect panorama and want to email it to your friend. You needn't start from the Camera or Photos app (although you can, by opening the photo you want to share, then tapping the square 'Share' icon and selecting the Mail icon).

Instead, head over to the Mail app and start composing your new message. Tap and hold a blank



bit of the message to bring up the contextual menu, then tap on Insert Photo or Video (you may have to tap the right arrow). You'll get the photo select screen. You can pop a photo or video clip into an email simply by tapping and holding on the message body. Simply select the file, and then select the level of compression to finish.

17. Jump back to drafts in iOS Mail

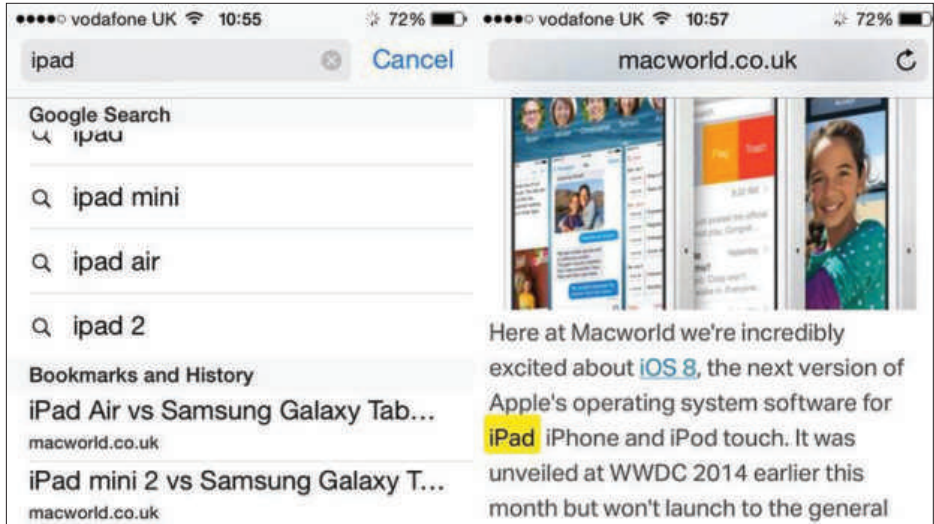
Maybe you abandoned a message before you tapped to send it. You needn't navigate deep into the Mail app's mailbox hierarchy to find your Drafts folder. Instead, you can tap and hold on the New Message icon to bring up a menu listing all your saved drafts. You can still select a totally new message from the drop-down menu that appears.

18. Delete messages in iOS Mail

If you do enable archiving as an option for your messages, that doesn't mean you're no longer able to delete messages outright from your iPhone or iPad. Just tap and hold on the Archive button, and you'll get a second option: Delete Message.

19. Archive messages in iOS Mail

To archive an email instead of delete it, simply navigate to Settings > Mail, Contacts, Calendar and tap on the relevant email account. Tap on the Account entry at the top, scroll down to the Advanced section, and tap on your email address; swipe down until you find the Archive Messages switch. Slide it to ON, and then make sure to tap the Done button in the upper-right corner twice to save the change.



Now, all instances of the Delete command in Mail will be replaced by an Archive button.

20. Show me more unread emails

Go to Settings > Notifications > Mail, and you'll see three sets of options. The Show item simply lets you choose how many unread email messages appear in Notification Center – the default is five, but this can be increased or lowered depending on your preference.

21. Adjust account notifications

To help make life a little easier for those with multiple Mail accounts, you can adjust notifications (not to mention their alert sounds) on a per-account basis.

Simply open Settings > Notifications > Mail and tap on the account that you want to edit. You'll get the standard Notification Centre options: alert style, app-icon badge, whether to show a preview of the

message and whether to view notifications on your device's lock screen, but it's unique to the account you selected. So you can choose to enable all options for your work account, but only some for a personal account.

22. Set a 'read' email as 'unread' in iOS Mail

Sometimes you scan through an email, think you've got it and then realise none of it sank in. Or you might want to remind yourself to look again at a message's contents without putting it with the really important messages in Flagged. One option is to mark it as 'unread' which can be done by tapping the flag icon from within the email and tapping 'Mark as Unread'. Alternatively, in the email list view you can swipe an email to the right to mark it as unread.

23. Pick Siri's audio input

If your car has a built-in speakerphone, or if you've got a Bluetooth accessory that has a microphone and speakers, you can choose which one Siri listens to for commands.

When you click and hold the iPad's Home button, you'll see a small 'i' icon to the right of the main Siri button. Tap it, and you'll get a menu of all the various inputs your iPhone can use; select the one you want.

24. Your own private IMDb

You probably already know that you can use Siri to get information about what's playing at cinemas near you, but Siri's also an expert in pretty much every motion picture ever made. Not only can you ask about your favourite films, but you can also

make Siri do the legwork when, for example, you're curious about which films actors have appeared in together. You might ask, "What movies star both Susan Sarandon and Tim Curry?" And Siri will reply: *The Rocky Horror Picture Show* and *Rugrats in Paris*. Er, how interesting.

25. Punctuate

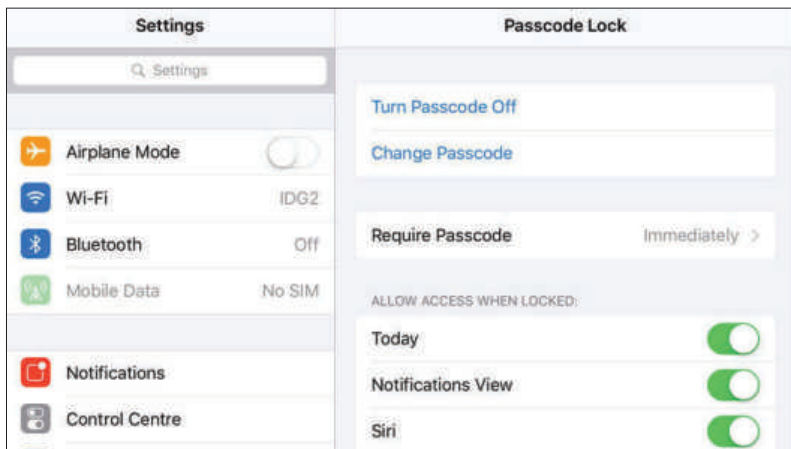
Saying punctuation aloud doesn't feel natural, but it can massively improve the readability of Siri-dictated emails. For instance:

Dear Jason comma new paragraph I'm working on that Siri story comma and I expect it will be ready soon exclamation mark

Other exciting punctuation is available: ampersand, asterisk, all caps on and all caps off (Caps Lock) and even winking face.

26. How to make Siri more secure

We'll end with a more serious tip. By default, Siri can be used even from a locked iDevice – which means



a thief could send messages to your contacts. To change this, go to Settings > Passcode and enter your passcode. Once accessed, simply switch Siri from ON to OFF.

27. Take better panorama photos

What's the secret to a well-composed panorama? A few simple principles will help you create to something memorable. First of all, avoid wobbly or crooked shots by sticking to the central line: this is basic but crucial stuff.

Also consider the composition before you start shooting and turning. Decide where you'll stop (bear in mind any ugly eyesores you want to keep out of shot) and think about lighting: a panorama incorporating both well-lit and gloomy areas may not work well. Trying to capture panoramic photos in dark situations will never end well, either. Finally, work (and move) slowly throughout for a neat shot.

28. Reverse panorama

While we're on the subject of panoramic photos, we've got one last tip for you. Normally, the Camera app prompts you to take panoramic photos from left to right – but what Apple doesn't make obvious is that the arrow can be reversed. To reverse the arrow and allow you to take a panoramic photo from right to left, simply tap once on the panorama guide to flip it to the opposite side of your screen.

29. Shared Photo Streams

You probably already know about the iCloud Photo Library, which shares images between your iOS devices (and Macs). But if you want to share photos

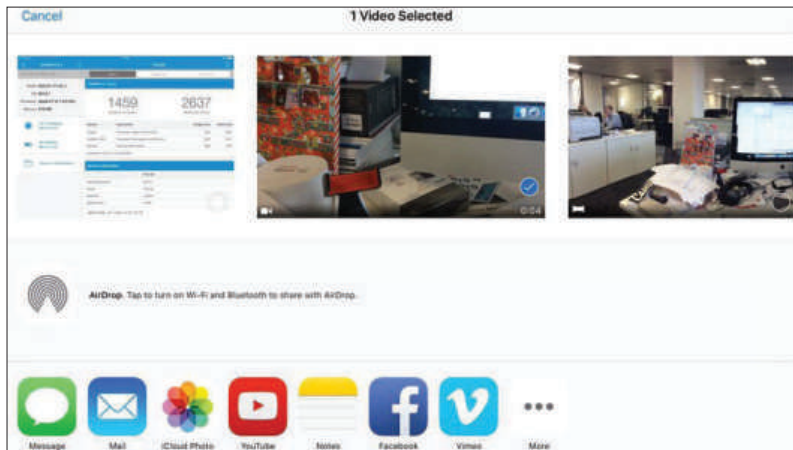
with specific friends, family or colleagues, you can also create Shared Photo Streams.

To create such a stream, open Photos and tap on the 'Shared' tab in the toolbar. In the upper left corner is a '+' button; tap that and enter a name for your shared stream, along with a list of people you'd like to invite.

Photos can be added from your existing photo albums or Camera Roll by tapping on the Share button and selecting Photo Stream, or by tapping Edit while viewing your shared stream and tapping the Add button that appears at the bottom. The people you've shared the photo stream with can comment on or 'like' your photos as well as uploading their own, and you'll get notifications whenever this happens.

30. Share videos on your iPad to YouTube

You can easily share your videos with your YouTube subscribers directly from the Photos app on your iPad. Simply find and tap on the video in your



Camera Roll, tap the share button and select the YouTube icon from the list. The same effect can also be achieved by tapping the 'Select' button in the top right hand corner of the icon view, and selecting the video you want to upload.

It's not just YouTube though, with the likes of Vimeo and Facebook also available in the Share sheet. Don't forget about AirDrop either, a straightforward option for when you want to send a video directly to someone over Bluetooth.

31. Remove red-eye on an iPad

A built-in red-eye removal tool will help you sort out this most common of photographic problems, though it isn't a situation that iPad-ographers should find themselves in very often, due to the lack of a flash on the iPad. Anyway, find the imperfect photo in your Camera Roll and tap Edit (in the top right hand corner), then choose the red-eye option in the top left corner: the red circle with a diagonal white line through it.

It's worth mentioning that this icon is only displayed if iOS detects red-eye in the photo – which is both impressive and really annoying, especially if iOS doesn't detect red eye where it is present.

32. Improve privacy on your iPad

You don't necessarily want your personal data accessible to every app that asks, and iOS is able to give you the kind of fine-grained control that you crave. Under the Privacy section of Settings, you can not only adjust which apps have access to your location, but also prevent them from accessing your contacts, calendars, reminders, photos and

Bluetooth sharing. Plus, if you use Twitter or Facebook, you can decide which of your apps can log in with your credentials. Just tap the appropriate section for any of these and slide the switch for the selected app to OFF.

33. Impose Restrictions

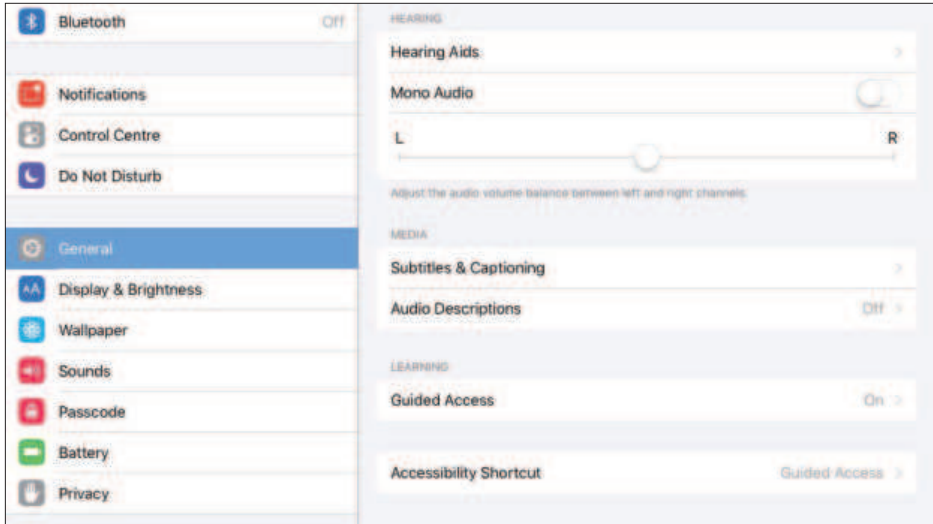
Go to Settings > General > Restrictions, tap 'Enable Restrictions' and you'll be prompted to enter a passcode. You can then select which features you would like to lock down on your iOS device. If you're planning to hand the iPhone over to one of your children, who has a habit of unintentionally deleting your apps, you can specifically disable that capability from the Restrictions screen. You can also prevent access to the iTunes Store, the iBookstore, Safari, Camera, FaceTime and other elements.

34. Set up Guided Access on your iPad

While we're talking about limiting what your iOS device can do, now's a good time to mention Guided Access, which you turn on under General > Accessibility. Once you've enabled the feature, go into any other app and triple-click the Home button. That enters Guided Access.

Now, if you want, you can black out certain regions of the current app's interface. Say, for example, that the game your child will play has an omnipresent Settings button. You can trace a circle around that button, and that section of the app will ignore any taps.

The other key feature of Guided Access is that it disables the Home button, so your youngster won't accidentally quit the app prematurely. To exit an app



in Guided Access mode, you triple-click the Home button again, and provide your passcode.

One added benefit of Guided Access is that it can serve as a better Do Not Disturb, since it silences banner notifications and alert sounds.

35. Limit advertiser tracking

If you're going to restrict your children's access, you might as well restrict what advertisers can do too. In Settings, hit Privacy, then tap on Advertising way down at the bottom. On the screen that appears, you'll find two options. The first one, Limit Ad Tracking, provides an indicator to internet advertisers that you don't want them to track which adverts you've viewed and engaged with (which they do so they can show you ads that they think may be better suited to you).

The second option on this screen is a button to reset your advertising identifier – it's meant to be

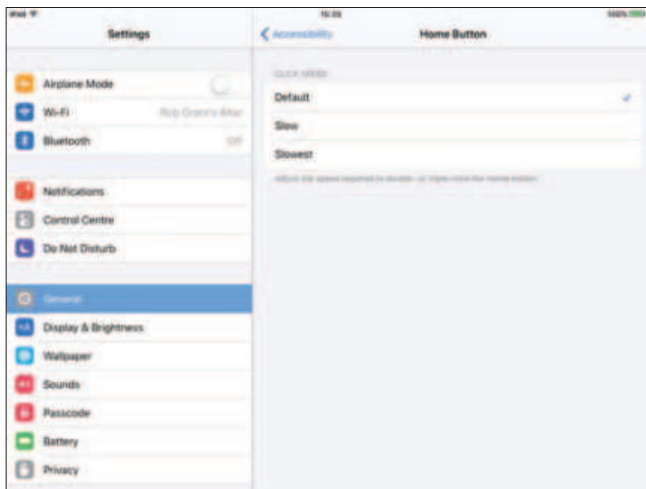
an anonymised tracker that advertisers can use to recognise your interest when showing their adverts in apps. If you start seeing in-app ads that seem to know you too well, you can reset your identifier here to start from scratch.

36. Manually manage iCloud space

Don't forget that you can control what iCloud stores for you in your online backup – especially if you're just using the free 5GB allotment that Apple offers. Find instructions [here](#).

37. Adjust Home button double-press

From within the Accessibility menu in the Settings app, there's a setting that lets you choose how quickly you need to double-press or triple-press the Home button for it to register as a single action, rather than separate presses. Simply tap on the 'Home Button' subsection and select your preference: Default, Slow or Slowest.



38. Assign a function to Home button triple-press

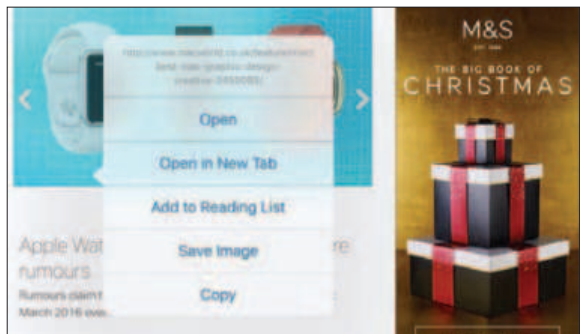
The Triple-click Home setting now allows you to choose a single action (Guided Access, VoiceOver, Invert Colors, Zoom or Assistive Touch) or multiple options that will appear in a menu when you perform a triple-press.

39. Access recent Safari browsing history

In Safari, tap and hold on the Back button to see a list of your recently visited pages, and tap and hold on the browser's New Tab Plus (+) button to get a list of recently closed tabs. If that's not enough and you need to see your complete browsing history, tap on the Bookmarks icon (book to the left of the URL field) and select 'History'.

40. Open web pages in the background

Safari on the Mac makes it easy to open linked web pages in a new tab, so you needn't interrupt what you're reading just because you also want to check out a few linked items. You get that same perk on iOS, although you need to enable it first. Visit Settings > Safari > Open Links and choose the 'In Background' option. Now, tap and hold on links in Safari to choose to open them in the background instead.





10 best iPad Pro apps

The 10 apps you should download now

1. Paper

Price: Free

There are no shortage of writing and painting apps on the iPad, but FiftyThree's Paper is the one to get first. This app enables you to sketch, and draw, with a variety of different pens, pencils and brushes, and the scissors act like cut-and-paste but for your scribbles. There's also a neat Pen and Ruler tool that you can use to draw arrows, squares, triangles and other shapes (it makes for an effective flowchart too).

When it comes to picking the best apps for iPad, we chose Paper hands-down to be number one in



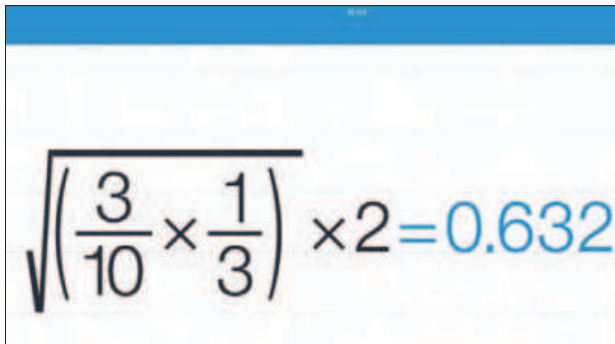
our list. No other app recreates the experience of working with a physical medium quite as well. Like its name suggests, its paper for your iPad.

2. MyScript Calculator

Price: Free

Debate rages fiercely as to which calculator app is the best for the iPad Pro. MyScript Calculator is slightly different from the rest, in that you sketch out sums as if you were drawing them on paper (rather than tapping buttons).

As you sketch numbers, and symbols they are analysed and the sum is calculated. It's like magic paper that performs calculations for you. In many ways MyScript Calculator is more intuitive than other calculators, and we love being able to sketch



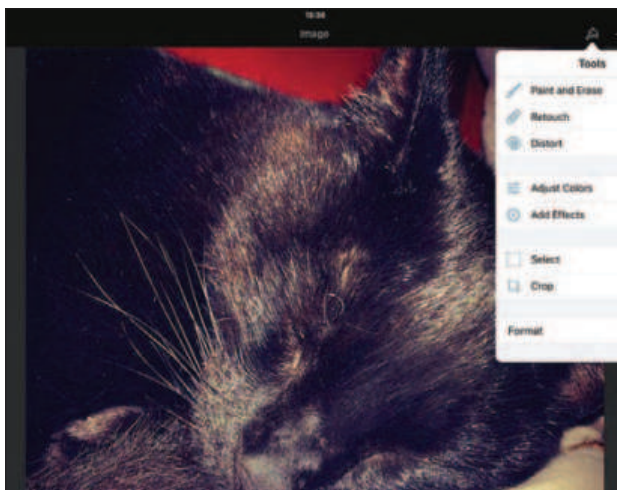
A screenshot of the MyScript Calculator app interface. The app has a blue header bar with the word "MyScript" in white. Below the header, a mathematical formula is displayed: $\sqrt{\left(\frac{3}{10} \times \frac{1}{3}\right)} \times 2 = 0.632$. The formula is rendered in a clean, modern font, with the result "0.632" highlighted in blue.

out sums while we study. Above all, MyScript Calculator is one of those apps that feels tailor-made for the iPad Pro.

3. **Pixelmator**

Price: £3.99

No top 10 list of iPad Pro apps would be complete without Pixelmator. While we agree that Pixelmator isn't the most leftfield choice for a "best iPad Pro apps" feature, it's still got to be on the list.



Pixelmator is the most powerful image-editing app on the App Store, and it's a testament as to what App Store developers can achieve. With full Apple Pencil integration it's an absolute must-have for anybody who works with images. And at just £3.99 it's shockingly good value for money.

4. OmniGraffle 2

Price: £39.99

Sooner or later you need to make a diagram, chart, or a flowchart on your iPad Pro and you'll wonder what the best diagram-making app is: wonder no more, it's OmniGraffle 2. At £39.99 OmniGraffle isn't a cheap app (although it's reasonable in the world of full-priced commercial software), but this isn't like other apps. OmniGraffle 2 for the iPad Pro is every bit as powerful as its desktop counterpart, which is used by designers worldwide.

With the Apple Pencil you can drag and drop elements from the extensive library onto the page,



and mark them up with the Smart Keyboard. You can design everything from app interfaces to knitting patterns, from government charts to warning signs.

It is a powerful app, and well worth every penny.

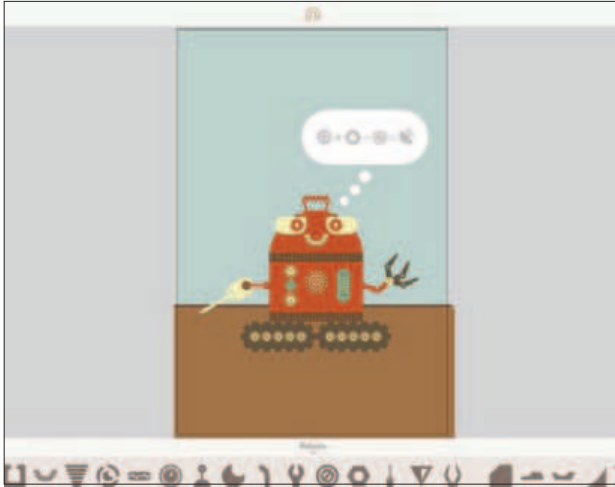
5. Chunky

Price: Free

Reading comics and graphic novels on your iPad Pro may seem a little frivolous, but reading comics on the iPad Pro is an exceptional experience.

Most comic books are larger than the old iPad's window, but they fit neatly to the iPad Pro's 12.9in display. And the vibrancy and colour of the iPad Pro display is incredible when looking at digitally drawn comic books. Chunky is our pick for the best comic book reading app on the iPad, and it has integrated support for all the major cloud services. So if you have some comic book files around, upload them to Chunky and see how glorious they look on an iPad Pro's display.





6. Assembly

Price: Free

There are lots of great illustration apps for the iPad Pro, but the one that's stolen our heart is Assembly.

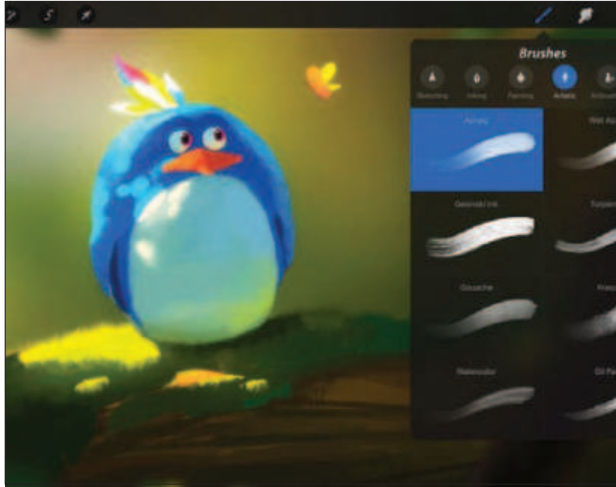
Rather than ask you to draw everything from scratch, it offers a range of shapes that click together to build objects. It's easy to slot together different types of blocks, and we find it easier to make things with Assembly than any other illustration app.

While seasoned illustration pros may blanch at Assembly, we think it's great for compositing together an idea, and some of the illustrations look amazing. Assembly has also got great support for sharing your creations, and using creations made by other people.

7. Procreate

Price: £4.49

Procreate is another app that we really couldn't leave off this list. Procreate is the best pure painting



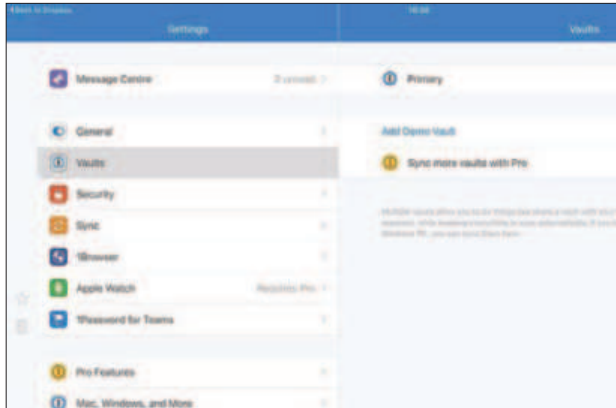
and drawing app for the iPad. With the Apple Pencil, Procreate has really come to life, and it's now in its element. With a huge array of brushes to choose from, you can ink, paint and airbrush just about any creation. It works wonderfully with the Apple pencil too. If any app can kickstart your creative streak, it's Procreate.

8. 1Password

Price: Free

The iPad Pro is a much more powerful device than you'd imagine, and it often serves as a laptop replacement. It can't do everything; but some things it does much better than a MacBook. So we often find ourselves bouncing between a MacBook and iPad Pro, and these days we need to remember hundreds of passwords.

1Password eliminates a lot of the hassle of getting online, by remembering all your passwords and filling them out as you go. It also works across PC

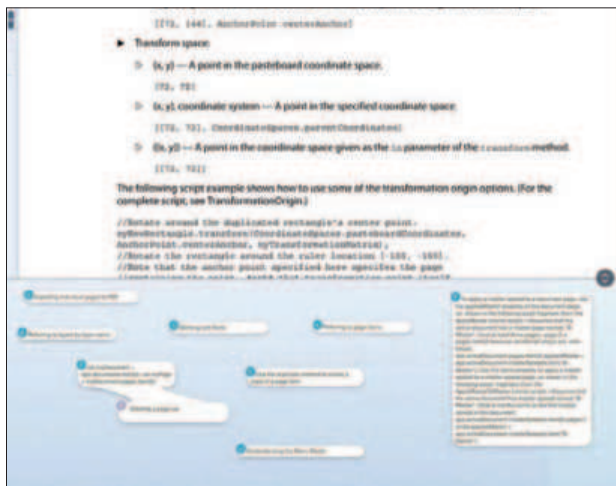


and other computers, and you can sync everything securely. We find 1Password to be an app we really don't want to live without.

9. LiquidText

Price: Free

The iPad Pro's larger screen makes it ideal for reading PDF documents (much more so than the



regular iPad). There are a lot of good options around for PDF reading, but we've warmed to LiquidText.

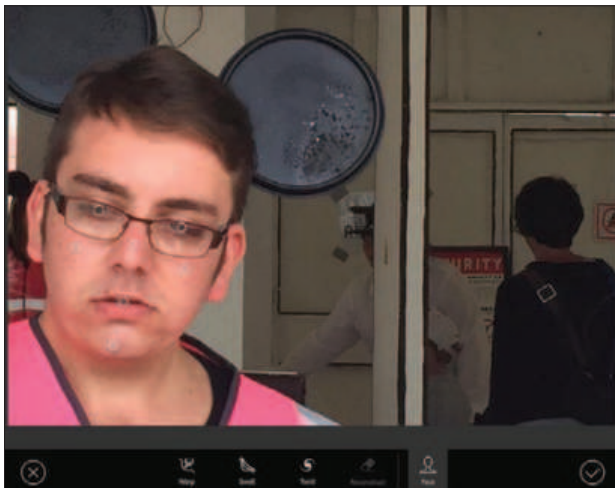
As well as being great to look at, its standout feature is you can drag text snippets to a holding area to create bookmarks. You then use a pinch gesture to cram the text into one screen, displaying just your bookmarks. Sounds odd? We find it works when working through a document and taking notes.

10. Photoshop Fix

Price: Free

Adobe hasn't brought the full version of Photoshop to the iPad, instead it's split up all its features into different apps. Photoshop Fix is the one most people will love, and it offers a quick range of fixes for your shots. We're particularly fond of the Liquify > Face option, which automatically detects face points and enables you change frowns into smiles (or vice versa), as well as enlarge or reduce facial features.

Lou Hattersley





Group Test: Speakers

Give the audio on your iPhone and iPad a boost

The iPhone 6s and 6s Plus provide up to 128GB of storage, which makes them ideal for home entertainment and storing all your music and video files – even those with 16GB devices can stream the latest music through the likes of Apple Music and Spotify. With music becoming more easily available, you'll need a good speaker system to go with them, and you're really spoilt for choice these days.

There are dozens of speaker manufacturers fighting for a slice of the Apple pie, with speakers in all shapes and sizes, designed for both indoor and outdoor use. Many speakers talk the talk – but

do they walk the walk? Here we explain various features you should look out for when in the market for a new speaker for your device, including the compression technology used by the speaker, and 360-degree audio.

Compression technology

By default, every Bluetooth audio-capable device must be able to use an agreed basic compression system, known as SBC. Sub-band coding is a psychoacoustic lossy codec – that is it discards music information deemed not so important to our ears, to greatly reduce the number of bits that must be sent in a digital music stream.

The quality of SBC varies and it runs at various bitrates, depending on how fine and deep the slices are made into separate frequency bands known as ‘bins’. Actually quality depends on how the sending device has been configured by its maker. But SBC typically runs at around 200kb/s, and has the subjective quality of MP3 at 128kb/s – which is to say, not at all good.

Alternatives are now in use thankfully. Top dog is aptX, a British invention that forms the basis of DTS cinema sound. It’s still lossy and compressed sound but amazingly nearly transparent to CD resolution at its fixed bitrate of 350kb/s. Samsung invested heavily in current aptX license holder CSR plc and now fits aptX compatibility into most of its Google phones.

Apple does not include aptX in any of its iOS devices, although Macs since Snow Leopard can use aptX Bluetooth audio. Instead, the iPhone and iPad will try to beam out Bluetooth audio using the

AAC codec, which is part of the MPEG-4 standard. Results are always better than SBC, but not quite so good as aptX.

Amp classification

The second hindrance to Bluetooth speaker sound is the current reliance on low-fidelity amplification technology, in common with other budget consumer electronics. While natural sounding hi-fi amplifiers still use a linear system known as Class A or Class B (more typically both, to form Class AB), cheap and portable audio devices use a fast-switching PWM system to drive speakers, known as Class D.

Class D is a clever way to make amplifiers far more efficient, turning more precious mains or battery power into usable amp output power. That's particularly noteworthy in a mobile age dependent on batteries. Class D amps run cold so don't require massive heatsinks to vent unwanted heat. A complete powerful 20W amp module can be built around a small microchip, saving much space and cost. The technology has everything going for it – except sound quality, which is typically grainy, harsh, lifeless and stripped of the natural essence of music.

The smallest of speakers with a single mid-range speaker and limited volume can hide some of these issues; the challenge for the designer is to make a full-range speaker system that makes you actually want to listen to it.

Battery life and additional capabilities

So, what should you look for when in the market for a Bluetooth speaker? A popular feature of Bluetooth speakers is “360-degree audio” – but what is

360-degree audio? Generally speaking, speakers that offer 360-degree audio are usually cylindrical or circular in design and feature drivers facing every direction, opposed to the traditional front-facing speaker setup. This produces 'room filling audio' which waves goodbye to the audio 'sweet spot' that you'll find on traditional speakers, where audio will sound best when facing a certain direction. Though it's not a deal breaker, it's usually something we look for when in the market for a new speaker.

What about battery life? While not too long ago, the standard battery life for a Bluetooth speaker was a slightly disappointing five hours, we've come along way with regards to Bluetooth accessory battery life and with many budget speakers offering upwards of 10 hours per charge, we wouldn't recommend buying a speaker that offers anything dramatically less. Also, it's worth keeping an eye out for speakers that double up as portable battery chargers, as it'll probably come in handy when using your smartphone to play music.

Some Bluetooth speakers also offer Wi-Fi connectivity, so which connection should you opt for? Traditionally, using a Bluetooth connection gives you a 10m range, which means that you'll only be able to play music from a speaker in the same room as you - any further and you'll probably experience the audio cutting out. However, Wi-Fi has a much wider reach, and could allow you to play music from anywhere in the house. With this being said, the Wi-Fi setup process can be quite stressful and require users to install a specific app on their smartphone in order to operate the speaker, whereas Bluetooth setup takes 30 seconds.

GEAR4 SoundWave portable Bluetooth speaker

Price: £40

Another great Bluetooth speaker for the money is the GEAR4 SoundWave, the company's latest portable Bluetooth speaker. Black in design with a smooth-to-the-touch silicon finish, the SoundWave certainly doesn't fall into the category of ugly Bluetooth speakers, though it is pretty bulky when compared to other portable Bluetooth speakers, measuring in at 22.5x6x8cm and weighing 496g. However, with this being said, its larger-than-usual size means it can pack some serious audio equipment under the hood, which provides surprisingly decent audio – but we'll come to that.

On top of the Bluetooth speaker, you'll find a number of controls that not only allows you to change the volume, but also allows you to skip to the next track, skip back to the previous track and even pause the music completely. Though these buttons may not sound ground-breaking, a number of manufacturers are moving away from physical Bluetooth controls in favour of exclusive control via



the device playing music, but that's not always ideal and we like to have the option to control playback via the speaker.

The GEAR4 SoundWave features twin speakers that, when coupled with a passive radiator for additional bass, produces audio that's both room filling and full of bass. However, the bass isn't too overpowering – it's subtle enough to make its' presence known without drowning out the midrange. The power of the SoundWave is pretty impressive as it can reach high volumes without the distortion that you'll find with many other budget Bluetooth speakers, making it an ideal companion for those trips to the beach or the park.

With regards to battery life, you should get around six hours on a single charge of its rechargeable lithium-ion battery. You can connect to the speaker via Bluetooth with a range of 10m, although it also has an auxiliary input to be used with older devices that don't feature Bluetooth connectivity.

UE Boom 2

Price: £169.99

Ultimate Ears' UE Boom 2 is the second generation BOOM, bringing with it a number of improvements when compared to the original (and hugely popular) UE Boom. The main selling point of the UE Boom 2 is its 360-degree audio, providing truly room filling audio and waving goodbye to the speaker audio 'sweet spot'. It's not just audio projection that makes the UE Boom 2 the speaker that it is though, it's shock and dirt proof with IPX7 rated water resistance, meaning it'll survive any journey you take it on.

The UE Boom 2 also boasts a 15-hour battery life, has a 100ft wireless range and can connect to two devices at once, providing a musical switch-over without having to disconnect from the speaker and stop the music from playing. It helps to make listening to music a more sociable experience, rather than having one person deciding what's played. Users can also download the UE Boom app to tweak the EQ of the speaker and even pair up with a second UE Boom 2 for a true stereo experience.

It's available in a range of colours, from a rather modest black and grey to a more outlandish orange and purple combo. The best part about the UE Boom 2 is that the company is constantly updating the speaker and adding new features, all of which can be installed via regular OTA updates, making the speaker future-proof (to a certain extent, anyway).



Marsboy Orb portable Bluetooth speaker

Price: £38.99

Marsboy's Orb, the 5W Bluetooth-enabled budget speaker will turn your bedroom into your own private disco, thanks to its built-in colour changing LEDs. Circular in design, this black plastic speaker is half mesh and half soft-touch plastic. Below the meshed surface a series of LEDs can transmit a range of colours, creating a disco-like effect in your bedroom.

Rather than pulsating to the music, the LEDs are controlled by choosing one of seven programmes. The button to control this is found on the speaker's rim. Also here are the various controls:



play/pause, skip track, volume up/down and answer call when the speaker is connected via Bluetooth to a smartphone. You can also hook it up using an AUX cable, or take advantage of the built-in microSD card slot - the Marsboy supports MP3, WMA, WAV, APE and FLAC. Removable memory card support is not at all a given on cheap Bluetooth speakers.

There's also an option that allows you to pair two Marsboy Bluetooth speakers to create surround sound from your iPhone or iPad – which is handy, as the Orb isn't the loudest Bluetooth speaker we've ever heard. While audio isn't of the crystal clear variety you'd find in true audiophile equipment – and neither would you expect it to be at this price – the Marsboy was able to handle everything we threw at it, from rock to pop and everything in between. For the money, you certainly can't complain about the performance. And with a built-in 3000mAh battery, you should see around 12 hours of battery life on a single charge.

Cowin Ark

Price: £149.99

The Cowin Ark is unlike many other Bluetooth speakers as its formed of two parts; a portable Bluetooth speaker/soundbar that sits on top, nicknamed Cruze, and the wired base, nicknamed Ark. The mixture of brushed metal sides and a mirror finish on top means that the Cowin Ark demands attention – if you're looking for a Bluetooth speaker system that'll be 'invisible' in its surroundings, the Ark isn't the best option for you.

Though the Cowin Ark comes as a two-piece Bluetooth speaker system, the Cruze can be taken to the beach or the park and be used by itself, thanks to its built-in rechargeable battery. The Ark features Magnatec technology, which syncs the two parts of your system ready for playback, while



also keeping the Cruze securely attached to the Ark whenever its placed on top – but that’s not its only functionality. The Magnatec technology also provides wireless charging for the soundbar, which means the Cruze is fully charged and ready to go whenever you are. Oh, and the Ark can also be used to charge up your smartphone too, if it supports wireless charging.

We were really surprised by the audio quality of the Cowin Ark, especially with regards to its bass output. The levels of bass are nothing short of phenomenal and when paired with a soundbar that can produce 35W of room-filling audio, the result is a well rounded sound perfect for a variety of tasks, from background audio when you’re relaxing to playing tunes full blast in your living room with your mates. This is thanks to its two speaker drivers, two passive radiators and a 5in ported subwoofer.

Edifier Bric Connect

Price: £65 on Amazon

The sophisticated design of the Edifier Bric Connect is suited more to the home than outdoors in our opinion, especially with no kind of water, dust or shock resistance provided with the speaker. It certainly isn’t on a par with the likes of the UE Roll in terms of its indestructibility, but with this being said, it’ll suit many users both at home and away – as long as you don’t plan on going swimming with it!

Unlike many other Bluetooth speakers, the Bric Connect offers two ways to power the speaker, one suited for home and one suited for the outdoors. The first option is to plug the speaker directly into the mains, which is ideal for those of us that want



to use the Bric Connect as a stationary Bluetooth speaker within the home. But what happens when you want to venture out with the Bric Connect? The good news is that the speaker can also be powered via batteries, but not the lithium-ion rechargeable ones that you're probably expecting. Instead, the Bric Connect requires six AA batteries to power the speaker wherever a plug isn't available.

The Bric Connect produces well rounded, room filling audio that we think is well above the Bric Connect's £65 price tag. The main cause of shock was the levels of bass produced by the speaker (thanks to its bass reflect port at the rear), as we'd only heard a similar level of bass produced by two-piece systems. It doesn't drown out the mid range either, which is an issue we've experienced with Bluetooth speakers in the past. Vocals sound rich, and the speaker performs as well playing acoustic music as it does playing Dubstep.

Cambridge Audio Bluetone

Price: £199.95

The Bluetone's matte black casing isn't much to look at, but it packs a serious punch for speaker



costing just under £200. With 100W output, the Bluertone is powerful enough to really fill a room with sound, and provides a more solid bass sound than many compact speakers of this size. It measures 182x354x118mm and weighs 4.1kg so isn't quite as portable as some of the other speakers in this round-up. It only runs off mains power, but there's a carrying handle built into the back of the speaker and it's light enough to easily carry from room to room at home.

It uses Bluetooth for wireless connectivity – with the option of Apt-X for devices that support it – and there are two inputs for non-wireless devices as well.

Denon Envaya Mini

Price: £99.

The Denon Envaya Mini is a gorgeous little Bluetooth speaker ready for use with your iPhone, iPad or Mac. It measures in at just 20.9x5.4x5.1cm, but it weighs a surprisingly hefty 558g, which makes it a little less portable than we'd like.



But where this speaker really excels is the audio, so there's a bit of good news for you. It boasts dual 40mm full range drivers with a 40x83mm passive radiator, which produces both crisp sound and impressive bass.

Maxell MXSP-BT03

Price: £44.99

This petite portable speaker from Maxell will appeal to those who value style, ease of use and true portability above audio quality. It's by no means a bad little speaker set for your iPhone or iPad. It comes in a variety of colours including



white, blue and black. Weighing just 278g and just 154x59x46mm in size, it's well put together and should survive most tumbles thanks to its durable build. It's a 6W output wireless speaker set with two cones and no subwoofer so don't expect amazing audio quality, but for its affordability and portability it's a price some will be willing to pay.

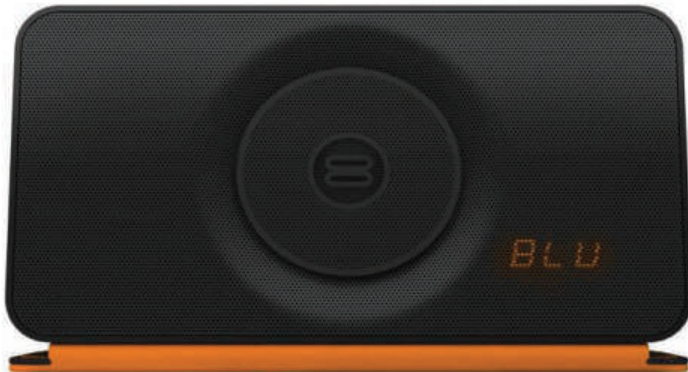
There's Bluetooth 4.0 or you can plug in via the 3.5mm cable, and it's loud enough to fill a room. There's a built-in DC 6V 12000mAh rechargeable Li-ion battery, too.

Bayan Audio SoundBook Go

Price: £62.99

Third in the series, the Bayan Audio SoundBook GO is a Bluetooth portable speaker worth reading about. It's an affordable little speaker that bucks the trend for many of its Bluetooth breed by being a delight to listen to. Plus, it's a neat design that provides some protection to the front perforated grille if you should travel with it.

Inside the SoundBook Go is a pair of 35mm full-range drivers powered by a 7.5 watt stereo



Class D chip amplifier. You'll get reliable Bluetooth connection or the option of a 3.5mm minijack for improved sound performance.

Scosche BoomBOTTLE

Price: £119

The Scosche BoomBOTTLE is a portable speaker ideal for those who enjoy the outdoors. As the name suggests, it's designed in the shape of a drinks bottle, which is actually designed to fit in the bottle holder on your bike. It's able to pair with an iPhone or iPad via Bluetooth, USB or 3.5mm jack.

Using the BoomBOTTLE in your bike's bottle holder is not exactly ideal, but thankfully it's not limited to just that. It lends itself to other outdoor situations and it's robust, too. The cylindrical speaker shape means it offers omni-directional sound, provided by two 3W 40mm speakers.

Plus, it weighs a surprisingly light 443g and is 70mm across and 205mm long.





Pure Jongo S3X

Price: £129.99

Pure's Jongo speakers have been really popular, and the company recently added the portable S3X model to the range. Admittedly, the S3X is a little heavier than many of its portable rivals – at 1.25kg it weighs almost as much as the 13in MacBook Air – but its rechargeable battery lasts for up to 15 hours and its 20W output is powerful enough to get things going at an outdoor party or BBQ.

The S3X includes both Wi-Fi and Bluetooth for streaming your music. And, like all the other Jongo models, the S3X can be used on its own, paired with another Jongo for two-channel stereo, or as part of a multi-room system that beams music all around your home.

Bowers & Wilkins A7

Price: £699.99

The Zeppelin from Bowers & Wilkins was one of the first speakers to support Apple's AirPlay, but



the company has released a number of other AirPlay speakers since then and the A7 is its current flagship model. The £699 price tag is pretty steep, but the A7 can earn its keep, with five separate drivers – including a proper sub-woofer – that provide terrific clarity and detail, along with a good, firm bass sound. And with 100W total output the A7 can fill a small hall with sound, let alone your front room at home. There's no Bluetooth but, as you'd expect, the A7 supports AirPlay for your iOS devices, and provides both Wi-Fi and Ethernet for connecting to your home network.

Creative Roar

Price: £129.99

It's a while since we've heard from Creative, but its Roar speaker deserves to get your attention. It's a relatively compact speaker, about the size of a thick paperback, and finished off with a smart metallic grille. However, Creative's engineers have managed



to cram in five separate drivers and two amps, including a proper sub-woofer that gives it a nice firm kick in the bass.

Creative doesn't quote a figure for the amp output, but it really does create a big sound for such a small speaker system. It's a little heavy at 1.1kg, but the sound quality, eight-hour battery, and extras such as a microphone for voice calls make the Roar one of the best portable speakers we've seen in this price range. There's Bluetooth, 3.5mm line-in, Micro-USB and a microSD slot to boot.

Jabra Solemate Max

Price: £249.99

The rugged design and attractive sound of the original Solemate speaker earned it a lot of fans, so Jabra recently followed it up with the larger Solemate Max.

Admittedly, a weight of almost 3kg means that you probably won't be carrying the Solemate Max around in your backpack, but it does have its own carrying handle to help you out, and the extra size



and weight means that it can include a big battery that lasts for up to 14 hours.

It produces a big sound too – the bass could be a bit stronger, but its 90W output is powerful enough to get the party going when you're on holiday or out in the garden. The £250 price tag is a bit steep, but it's dust, dirt and water-resistant, so it'll earn its keep if you need a speaker system that can cope with the British weather.

Monster Superstar

Price: £99.99

Most speakers of this size sacrifice sound quality for portability, but the modestly named SuperStar claims to be the 'world's smallest audiophile' speaker.

It really is a pocket-sized little speaker, measuring just 48mm thick and 206mm long. However, it's splash-resistant and sturdy enough to cope with life on the move. The sound quality, inevitably, isn't up to true audiophile standard, but the bass radiator gives it a firmer sound than many of its ultra-compact rivals. It kicks out a decent volume too – noisier rock



and dance music can distort a bit at high volume, but it'll still do the trick for listening to a few tunes when you're out and about with your friends.

i-Box Max

Price: £124.99

It's not as portable as its little brother, the Trax, but the Max makes up for it with really good sound quality and a competitive price. The Max measures almost a foot long and weighs about 2kg, so it's



a bit big and heavy for a backpack. However, it's light enough to carry around indoors or to take out into the garden, and big enough to pack a decent punch as well. The 30W output won't have the roof rattling, but it's more than loud enough for listening to music in your bedroom, or for a dinner party or BBQ, and the inclusion of a bass radiator lends it a firmer, fuller sound than you normally get from mid-size speakers such as this.

iClever IC-BTS02

Price: £22.99

iClever's Bluetooth Wireless Speaker is one of the best cheap Bluetooth speakers we've tried. It looks great and it's affordable. It's surprising just how much sound emanates from this tiny zinc-alloy box. Given that you can easily fit the 64.5x64.5x70.1mm 261g iClever in a single hand, the 5W speaker hidden inside does a much better job than we should reasonably expect from such a portable speaker, both good on bass and free from distortion at high volume. **Lewis Painter**





Review: **Apple Watch**

We reveal how watch has integrated itself into our lives

From £299 inc VAT • apple.com/uk ★★★★★☆

In all the hubbub of the iPad Pro, Apple TV, and iPhone 6s launches, you could be excused for forgetting about this year's previous Apple darling, the Apple Watch.

There's been a lot of discussion of late over the Watch, in particular how it's doing and whether or not it's a flop. As someone who's been wearing one pretty much daily for eight months now, I feel like I've finally integrated it into my life enough that I've got a good idea of both its capabilities and its limitations. And believe me, it's got plenty of both.

Watch this

I've worn watches on and off for my life – I even went through a brief phase, and I'm not proud of this,

where I toted a pocket watch. I know. It was the late '90s, a lifetime ago. The Apple Watch wasn't even my first foray into the smartwatch arena; that came with the original Pebble, of which I was a Kickstarter backer. But by the time the Apple Watch came around, I'd already consigned my Pebble to the pile of outdated gadgets and gizmos in my office for a year or more.

All of this is to say that in its use as, first and foremost, a watch, the Apple Watch has been a success. I wear it pretty much every day, it tells the time: done. But when it comes to the smart side of the equation, well, that's a different story entirely.

Let's take one of the Apple Watch's core pieces of functionality: notifications. This is ostensibly the simplest smart feature on the Watch: your phone gets a notification, it pops up on the Watch with a subtle vibration. Most of the time, this feature is great. It's nice to get notification unobtrusively, rather than having a phone buzz or chime, and I've found that it actually tends to not disrupt personal conversations that much, because I can generally check my Watch later at a less obtrusive time.

But it's not without problems. The other day I got a notification on my watch of a text message I'd received the previous night, which had already shown up on Messages on my Mac. And which I'd already responded to. Since notifications are routed through the Watch, I frequently see an email pop up on my iPhone or my Mac twenty or 30 seconds before seeing the notification for that email on my watch. And in a bizarre glitch – my friend, Panic designer Neven Mrgan, dubbed it The Black Plague Bug – one of my conversations constantly shows

the same two really old message bubbles at the top when I receive a new notification.

And this is all in regards to one of the Watch's simpler features, one which I use pretty much every single day. Aside from telling the time, it's the least of what the Apple Watch does, because the Apple Watch does a whole lot. The sad part is most of it not very well.

Looking smart

At this point, I've removed most of the third-party apps and glances from my Apple Watch. Even with the native apps ushered in by watchOS 2, launching an application and waiting for it to load data is just too slow to be useful except in cases where I can't get to my phone. (The speediness of the Touch ID sensor on the iPhone 6s, in particular, has made a mockery of how much faster it is to unlock my phone and launch an app than wait for it to load on the Watch.)

Glances are likewise kind of sluggish, and having more than a few has made it largely unmanageable: there's no indication of which Glance is where, which means swiping through a bunch of them to find the one you want, only to have to wait for it to update. In watchOS 2, you can use Siri to open a Glance, but that feels a bit like using a crowbar to open a jar of pickles.

Third-party complications, another of watchOS 2's hallmark features, was something I was looking forward to greatly, but it's ultimately ended up being a bit underwhelming. I installed Dark Sky's, but most of the time it looks much like the built-in weather complication, and it doesn't seem to update

consistently, which means I have to load the app to get an accurate temperature reading... and then we're back to waiting for that to load.

Time will tell

Eight months into the Apple Watch, it seems clear to me that it's a cool device, but it's got a long way to go. I'm looking forward to seeing what watchOS 3 brings, but I'm starting to think that it will take until the second-generation Apple Watch for the whole thing to really come into its own. Because performance is definitely the biggest impediment right now, and there's only so much that software engineering can do to make up for slow hardware.

Despite all of my complaints, nitpicks, and criticisms, I'm still bullish on the Apple Watch. As smartphones and tablets become more and more people's primary computing devices, smart wearables are going to start taking over some of the more casual uses that those categories have abandoned. The slope of technology tends towards the more personal: from desktop, to laptop, to smartphone. Wearables strikes me as the next logical progression, the Apple Watch is already staking out around on the wrist. **Dan Moren**





Review: iPad Pro Smart Keyboard

Without a UK layout, it's hard to justify the price tag

£139 inc VAT • apple.com/uk ★★★★★

The iPad Pro launched on 11 November, and with it came a new and Apple Pencil stylus and Smart Keyboard accessory designed specifically for the iPad Pro review. We've spent time with all three, but here we're focusing on the Smart Keyboard, which is not only a keyboard to help bring laptop functionality to the 12in iPad, but also acts as a stand and a case to protect the iPad's screen.

Typing experience

I'm writing this review using the iPad Pro Smart Keyboard, and am surprised to find that it's suitably speedy once you get the hang of it. To begin with, I was making mistakes in almost every word, but it only took a few paragraphs to figure out the positioning of the keys and the amount of pressure required, after which my typing speed came back naturally and I almost forgot I was using it.

That's while I'm sitting at a desk though. One of the big issues with the iPad Pro keyboard is that it can't be used on your lap. It's not sturdy like the keyboard on a MacBook, so you'll need to find a solid surface to rest it on.

Each letter key is slightly concave – the centre of every individual key is a tiny bit lower than the outer edges. This helps your finger find its place on the key quickly and easily, to prevent you from making mistakes and to help speed up your typing.

The bigger keys like the shift and delete keys aren't dipped, but you'll still find that they're easy to tap when required, and you'll find that there are all of the keys you'd expect from a normal full-size keyboard. You'll also find a dedicated key for switching to other iOS keyboards like the emoji keyboards or a third-party option you've installed.

What's surprising, though, is that there are no dedicated iOS keys on Apple's Smart Keyboard. Third-party keyboard makers have been including buttons as shortcuts for the Home button, search, brightness and media controls.

Apple has designed iOS 9 to work with the Smart Keyboard, meaning you can use several shortcuts to get things done faster like you can with your Mac.

You can find out what the shortcuts are in any app by holding down the Command, Option or Control key.

Design

You'll find that the Smart Keyboard can hold your iPad at an ideal angle for use while typing, and that it's sturdy even when you need to use the touchscreen of the iPad itself. It's also ideal for watching movies or FaceTime calls even when you don't need to use the keyboard itself. The stand can only be used in landscape mode, of course, as the keyboard is connected to the longer edge of the cover, but that should suit most users.

I really liked feel of the Smart Keyboard's material, too. It's smooth to type on but it's also durable, made with custom-woven fabric that we imagine will hold up against grimy fingers small spillages thanks to its seamless design. When being used as a case, all parts of the Smart Keyboard that touch the screen are covered in a soft microfibre material, and the outside is a polyurethane material. It's a bit disappointing that it's not made with leather considering the price of the case, and we know from experience that the polyurethane looks well-worn after a few months of being carried around in a bag. It's also only available in a dark grey colour at the moment – we'd have liked a navy blue option too.

Plus, the cover only protects the front of the iPad so the back is vulnerable to dents and scratches. You'll need to invest in an additional Smart Keyboard compatible shell case to protect the aluminium back. Apple's own offering costs £65.

Where the Smart Keyboard's design does shine is in its low profile. It's only 4mm thick, which is pretty



impressive, so you'll hardly be adding any bulk to the iPad. It does weigh 336g, though so you'll find that it adds a bit of weight.

One of the biggest downfalls of the iPad Pro's Smart Keyboard for us here in the UK is the lack of a UK keyboard layout. The only option you'll get is a US English keyboard layout, which means no pound key. That's disappointing when you consider how much money you'll be spending on the keyboard. It costs a whopping £139, which is a hefty sum once you've already shelled out for the iPad Pro itself, which will set you back over £600.

Battery

You'll never need to charge the iPad Pro's Smart Keyboard. Instead, it connects to the tablet using magnets in the Smart Connector and uses



conductive material to pass data from the keyboard to the iPad and power from the iPad to the keyboard.

Price

As mentioned, the iPad Pro will cost you £139. That's a lot of cash to spend on an iPad accessory, particularly when you consider that you can get the Magic Keyboard for £79 from Apple and that's compatible with your Mac as well as iOS devices, and offers an overall better typing experience. Of course, the Magic Keyboard isn't as convenient to carry around and lacks the stand and cover functionality, but if the Smart Keyboard was around that price point we'd be much more likely to buy it. For £139 we'd like to see a back cover, backlit

keys and the butterfly key design, as well as colour options and a UK keyboard layout, too. Maybe we're asking a bit much, but Apple is asking for a bit much from us, too, we think.

Additionally, you'll find it tricky to get your hands on a Smart Keyboard at the moment. On Apple's online store it's suggesting you'll have a wait of three to four weeks at time of writing.

Macworld buying advice

We're torn about the iPad Pro Smart Keyboard. It has potential, but there are things that need to be sorted before we'd recommend spending £139 on it. We need to see a UK layout, more colour options and protection for the back of the iPad Pro. For now, there are third-party options like Logitech's Create case, which is not only cheaper at £110 but also includes dedicated iOS keys, backlit keys and protection for the back of the iPad. **Ashleigh Allsopp**





Opinion: Questioning Apple's battery case

Why now? Why the bulge? Is it an Apple product?

“What’s with that Apple battery pack?” If you’re the resident Apple know-it-all in your family/office/school, you probably heard this question more than once this week. It’s an appropriate one to ask when the biggest company in the world dropped one of its strangest releases: a battery case with a weird hump that promises to extend the life of your iPhone 6 or 6s by 25 hours. I won’t say it’s awkward, but had it been released by a company like Griffin or even Mophie, it would have a hard

time finding someone to sit with in the cafeteria. But since it's Apple, the whole world noticed. The timing of the release was curious in itself – on a random Tuesday, just 17 days before Christmas – but even if it had been unveiled alongside the iPhone 6s in September, it would have been no less of an oddity. It might be the most un-Apple product ever released, and I have to wonder if Jony Ive even saw it before it was sent to production.

And each time I was posed the above question, I struggled to answer it.

Worst case scenario

When the first image of Apple's battery case popped up in my Twitter timeline, I scrolled right past it. It wasn't until I saw the same image up three or four more times in near succession when I realized it wasn't someone's joke mock-up.

Now Apple hasn't exactly had a stellar record when it comes to cases. There were the funky iPhone 5c covers that showed unsightly bits of words through the holes. The iPhone 4 bumpers that were more about reception than protection. And who can forget the utterly bizarre iPod Socks? But something troubled me about the battery case even more than the design. It's not just that it's cumbersome and goofy; rather, it seems to be trying to address a specific customer complaint with the iPhone 6.

Of course, you can argue that the iPhone 6 itself is an answer to specific complaint about the size of the screen compared to its Android foes, but the battery case feels different. When Apple designed the iPhone 6, it was a natural progression and

design evolution. Every decision – the size of the battery, the protrusion of the camera, the placement of the power button – was made to create the best product, warts and all.

The battery case doesn't look like it went through the same process. It's as if Tim Cook or Phil Schiller read a bunch of disparaging iPhone posts and called a meeting. And that's not how Apple operates.

Losing focus

There's no way to know whether Steve Jobs would have signed off on Apple's first battery case, but we do know that he despised knee-jerk products: "It's really hard to design products by focus groups. A

lot of times, people don't know what they want until you show it to them."

But if there was ever a focus group product, it's this one. While there's still some cool innovations inside that make it smarter than the average battery case – the Lightning connection is a nice addition and the live status updates are particularly clever – without the Apple symbol on the back it would never be mistaken for a Cupertino product. And at £79, I can't imagine it's going to fly off shelves.

The iPhone battery case is a solution to a problem, but I just don't think it's one Apple strongly believes needs solving. People have been comparing it to the Magic Mouse's charging port or the Apple Pencil's



built-in Lightning charger, but those are design compromises made for style and convenience. The Apple Pencil might look funny sticking out the end of the iPad Pro, but the care and detail put into its design is obvious. With the battery case, not so much.

Cause and effect

Apple doesn't need to create reactionary products. It has an army of third-party partners that are happy to fill specific needs that arise as people discover things that Apple chose to overlook. Some smarts aside, the iPhone battery case doesn't really offer much that the Mophie Juice Pack doesn't, and it's hard to understand its reason for existing, other than the occasional upsell to an unscrupulous iPhone 6 or 6s buyer at an Apple Store.

Of course, this could all just be an overreaction. A £79 accessory is basically a rounding error on Apple's bottom line, and after a few weeks it'll just blend into the others on the shelf at the Apple Store. By the time the iPhone 7 comes around we'll probably forget it ever existed.

It's no secret that Apple does its best work when it's giving its customers products they want, not what they want in a product, and I hope this isn't a sign of a shifting philosophy. The Apple I love builds products on its own terms. It doesn't respond to squeaky wheels with a generous application of grease. **Michael Simon**





Opinion: Apple should ditch 3.5mm headphone jack

Why using Lightning instead isn't as crazy as it sounds

Stop me if you've heard this one: Apple releases a new product that forgoes a standard piece of legacy technology. We read all about how said product is going to fail and how we can't possibly live without whatever it is that got left off. Millions of people buy one anyway, unaware or unaffected by the change, and the rest of the industry comes around to Apple's way of thinking.

So when I read the rumour that Apple is exploring an iPhone that ditched the 3.5mm headphone jack,

I barely batted an eye. Even if it turns out to not be true with regards to the iPhone 7, it's a move that is inevitable at some point in the iPhone's evolution. The universal port has been a function of every audio device since the earliest days of the Sony Walkman, and it has to irk Jony Ive to still be forced to include one decades after the Walkman popularized it.

But contrary to popular belief, I don't think the decision to remove the port will be for design reasons or out of a rabid desire to make the iPhone as thin as possible. As many have already pointed out, the iPod touch is already thinner than the iPhone, headphone jack and all. Rather, when Apple moves to dump the standard audio jack from the iPhone it will be in the name of progress, and like so many seemingly foolish decisions before it, we'll be all the better for it.

Serial killer

Everyone remembers the iMac for putting the first nail in the floppy disk's coffin, but that wasn't the only technology it put on the road to oblivion. From our own first look at it: "Most dramatically, this new consumer offering has no SCSI port, no standard serial ports, and no ADB ports. Apple has opted to replace these familiar connections with USB, a high-speed serial architecture that has suffered from slow adoption on the Wintel platform despite its technical advantages. Currently, no USB devices exist for the Mac."

In 1998, USB was still in its infancy, and Apple took a huge risk by making it the sole connector on the iMac, a decision even bolder than featuring

USB-C as the new MacBook's only port. The iMac was Apple's last gasp, and had USB not taken off, it might have been the end. But we know how that story ended. USB devices exploded and it quickly became the standard input port on towers and laptops everywhere. Stragglers aside, it didn't take more than a few years before serial and ADB were distant memories.

Removing the headphone jack from the iPhone is a similar proposition. With the iMac, Apple was betting that a nascent yet clearly superior technology was on the verge of taking off; by removing the 3.5mm jack from its biggest-selling mobile product, Apple is relying on Lightning and Bluetooth to facilitate the transition. But this time around, Apple is holding a much stronger hand – with an ace up its sleeve.

Power cord

Most people don't know it, but Apple has already added a specification to its Made For iPhone/iPod/iPad program to allow headphones to connect directly to the Lightning port. In many ways they're superior to their 3.5mm counterparts, offering lossless digital audio and enabling advanced features such as noise cancellation and digital-to-analogue conversion without the use of batteries.

But much like USB in 1998, there are limited options for music lovers. The first ones to market – notably the Philips Fidelio M2L and JBL's upcoming Reflect Aware earbuds – are relatively expensive with minimal audio benefits. And of course, they only work with iOS devices, giving manufacturers little reason to invest in the technology, especially when

there's a 3.5mm audio jack right next to it. Removing that port would certainly accelerate the proliferation of Lightning-enabled headphones, but even though Apple sells more iPhones than any other handset, the percentage of people using one is still relatively small, especially when compared to the number of mobile devices with an audio jack. And since Apple is unlikely to license the tech to the likes of Samsung and Huawei, it will probably be a while before major headphone manufacturers jump on board.

Presumably Apple will bundle a pair of Lightning earbuds, but beyond that, true Lightning headphones will likely be relegated to the 'pro' crowd, with higher-end models taking advantage of the advanced features to target audiophiles on the go. And for those who own headphones they can't bear to part with, there will surely be a dongle Apple will be happy to sell them.

Unplugged

A line of Lightning headphones is interesting, but I'm much more interested in what Apple can do without wires. The white cord hanging out of the top of our iPods might have been cool back in the clickwheel days, but that's not the case anymore.

Bluetooth headphones are the future Apple is betting on, and I can envision a campaign that spins the elimination of the headphone jack in a positive light, especially if the iPhone contains something like aptX or a homegrown codec to bolster the sound delivered to your ears. Bluetooth audio has yet to reach its potential, and a headphone jack-less iPhone might be just the push it needs. Besides, Apple's not about to

add a second Lightning port to the iPhone, so the removability of the 3.5mm audio jack creates a problem MacBook users will be familiar with: With a single port responsible for everything, you won't be able to use your wired headphones and charge your phone at the same time. Apple may indeed be working on a breakthrough in wireless charging for the next iPhone, but let's face it, wired headphone wearers will probably get short shrift here, forced to buy a clunky adaptor or juggle between charging and listening.

Made for iPhone

Whether we're talking about wired or wireless, however, Apple is in a unique position of strength when it comes to headphones. It's not just that it makes the most popular smartphone in the universe – it also happens to own one of the most popular headphone companies. And I suspect Apple is hard at work on the next generation of Beats' Solo and PowerBeats lines to help make the transition that much smoother.

The Lightning earbuds that Apple includes will be good enough for a lot of people, but it could also have a whole line of Beats headphones ready for all those millions of launch-day sales. There's any number of ways it could entice buyers – bundles, BTO, Apple Music discounts, even trade-ins – and since Apple Stores already offer a financing plan with the iPhone Upgrade Program, it would practically be an impulse buy; a \$200 pair of Bluetooth headphones would cost less than \$10 a month spread out over two years. I wouldn't be surprised if this one of the reasons it bought

Beats in the first place. Removing a port that's been standard on every mobile audio device for the past three decades is not a decision Apple is going to take lightly, and it's undoubtedly one Tim Cook and Jony Ive have been ruminating on for some time. A line of Beats headphones made exclusively for the iPhone, with matching colours and an Apple Pencil-style quick-charging port, would all but eliminate the type of growing pains the iMac experienced all those years ago.

Take the lead

No matter when the iPhone loses the headphone jack, it's going to cause an uproar. Any time Apple chooses to dump an old piece of tech, whether it's the optical drive or the 30-pin connector, people are invariably left with outdated equipment, but when you start messing with people's music, it gets personal.

But the transition needn't be so painful. Sure, there will be incompatibility and lost dongles to contend with, but with Beats in its back pocket, Apple can at least mitigate some of the shock. And by severing the dependency on the ancient 3.5mm jack, it could spur other headphone makers to bring some real innovation to mobile audio.

Because there's no point in fighting it. Sooner or later, we'll all come around to Apple's way of thinking. **Michael Simon**



